Publiée sous les auspices du gouvernement de la République malgache

Lahatsoratra navaoka eo amban'ny fiahian'ny Governemanta ny Repoblika Malagasy

Faune de Madagascar

93

Dariusz Iwan

Insecta Coleoptera Tenebrionidae

Pedinini Platynotina

IRD
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MNHN

Source : MNHN, Paris

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Don Publ. Scient.
(06/2010)

Insecta Coleoptera Tenebrionidae

Pedinini Platynotina

Bibliothèque Centrale Muséum
SDOC 6034553 MNHN, Paris

S 6072-93

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Insecta Coleoptera Tenebrionidae
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IRD Éditions
Institut de recherche pour le développement
Éditions Quæ
Éditions Cirad, Cemagref, Ifremer et Inra
Publications scientifiques du Muséum
Muséum national d'Histoire naturelle, Paris

Collection Faune de Madagascar 93
Paris et Montpellier, 2010

BIBL. DU MUSÉUM PARIS

Source : MNHN, Paris

Rédacteur en chef / Chief editor :
Henri-Pierre Aberlenc (Cirad – UMR CBGP)

Préparation éditoriale / Editorial preparation :
Yolande Cavallazzi

Coordination fabrication / Coordination fabrication :
Éditions Quæ

Maquette intérieure / internal layout :
Pierre Lopez (IRD)

Maquette de couverture / Cover layout :
Michelle Saint-Léger (IRD)

Mise en page / layout :
Bill Production

Traduction en malgache / Translation into Malagasy :
Pr Olga Ravoahangimalala Ramilijaona (*in memoriam*) (University of Antananarivo)
and Dr Richard Randriamanantsoa (Fofifa)

Photo de couverture / Cover photo :
Doyenus uncus Iwan (holotype mâle)
photo Henri-Pierre Aberlenc (Cirad)

Dessins en noir et blanc des planches / drawings of the black and white plates :
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Planches en noir et blanc / black and white plates :
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Photos en couleurs / Colour photos :
Tenebrionidae : Henri-Pierre Aberlenc (Cirad) et S. Dąbrowski
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ISSN : 0428-0709
ISBN : IRD, 978-2-7099-1685-1 ; Quæ, 978-2-7592-0630-8 ; MNHN, 978-2-85653-650-6

Source : MNHN, Paris

In memoriam

Nous avons le triste devoir d'annoncer le décès de notre excellente collègue, Madame le professeur Olga Ramilijaona Ravoahangimalala, entomologiste médicale, professeur de biologie animale à la faculté des sciences d'Antananarivo.

Nous nous étions rencontrés à Masoala en 2001, dans le cadre de l'expédition du Radeau des Cimes, tissant des liens de collaboration et de sympathie. Notre travail commun n'avait pas cessé, et notre regrettée collègue était une correspondante efficace de la Faune de Madagascar.

Nous prions sa famille, ses collègues et la faculté des sciences de Tananarive d'accepter l'expression de nos condoléances et de notre émotion.

Source : MNHN, Paris

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Pour l'achat des volumes de la Faune : voir la liste des revendeurs en page 175.

Source : MNHN, Paris

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Dariusz IWAN
Source : MNHN, Paris

Remerciements / Acknowledgements

Remerciements

Nous remercions Henri-Pierre Aberlenc pour son aide précieuse au cours de la réalisation de cette publication. Nous remercions pour leur obligeance les responsables des musées et les propriétaires des collections privées qui ont mis du matériel à notre disposition : Martin Baehr (ZSMA), Max Barclay (BMNH), Luca Bartolozzi (MZUF), Stanislav Bečvář (SBBC), Michael Brancucci (NHMB), Hans J. Bremer (ZSMA), Didier Drugmand, Patrick Grootaert (IRSN), Julio Ferrer (JFCS), Claude Girard (MNHN), Robert D. Gordon (USNM), Roland Grimm (RGCT), Bert Gustafsson (NHRS), J. Irish (NMB), Josef Jelínek (NMPC), Ivan Löbl (MHNG), Ole Martin (ZMUC), Otto Merkl (HNHM), Marc De Meyer (MRAC), Ruth Müller (TMNH), Laurent Soldati (LSCM), Manfred Uhlig (ZMHB). Nous remercions aussi nos collègues Beata M. Pokryszko pour la traduction anglaise, Henri-Pierre Aberlenc et Laurent Soldati (Montpellier) pour la réalisation des photos, des planches et la traduction des clés en français. Nous remercions particulièrement le Dr Claude Girard (MNHN) pour son hospitalité et son aide précieuse au cours de notre visite à Paris, dans le cadre du projet européen COLPARSYST.

Acknowledgements

I owe special thanks to Henri-Pierre Aberlenc for his help during preparation of this publication. I am grateful to the following curators for making available specimens from their museum and private collections: Martin Baehr (ZSMA), Max Barclay (BMNH), Luca Bartolozzi (MZUF), Stanislav Bečvář (SBBC), Michael Brancucci (NHMB), Hans J. Bremer (ZSMA), Didier Drugmand, Patrick Grootaert (IRSN), Julio Ferrer (JFCS), Claude Girard (MNHN), Robert D. Gordon (USNM), Roland Grimm (RGCT), Bert Gustafsson (NHRS), J. Irish (NMB), Josef Jelínek (NMPC), Ivan Löbl (MHNG), Ole Martin (ZMUC), Otto Merkl (HNHM), Marc De Meyer (MRAC), Ruth Müller (TMNH), Laurent Soldati (LSCM), Manfred Uhlig (ZMHB). I thank Beata M. Pokryszko for the English translation and Henri-Pierre Aberlenc and Laurent Soldati (Montpellier) who took photographs of the beetle habitus, and – especially warmly – Claude Girard (MNHN) for his hospitability and various forms of help during my stay in Paris. The visit was sponsored by the COLPARSYST – the support of the European Community (Access to Research Infrastructure action of the Improving Human Research Potential Programme).

Source : MNHN, Paris

Résumés / Summaries

Résumé

Ce volume est consacré à l'étude taxonomique illustrée des Coleoptera Platynotina de Madagascar Les Platynotina malgaches se divisent en trois groupes principaux : (I) les genres *Zidalus* Mulsant et Rey (trois espèces) et *Anchophthalmops* Koch (une espèce), qui occupent à la fois Madagascar et l'Afrique , (II) le genre endémique *Lechius* Iwan (trois espèces) , (III) le groupe de genres malgaches « Mélanocratoïde » (huit genres, 30 espèces) Les Platynotina malgaches comptent 37 espèces réparties dans 11 genres La présence à Madagascar d'*Anchophthalmops menouxi* (Mulsant et Rey, 1853) doit être confirmée. On donne les clés d'identification bilingues français anglais des genres et des espèces

Summary

The taxonomical study of the Coleoptera Platynotina of Madagascar is presented and illustrated The Madagascan Platynotina include three main groups: (I) the genera *Zidalus* Mulsant et Rey (three species) and *Anchophthalmops* Koch (one species) occurring in both Madagascar and the African continent; (II) the endemic genus *Lechius* Iwan (three species), and (III) the Madagascan "melanocratoid" generic group (eight genera, 30 species). The Madagascan Platynotina comprise 37 species in 11 genera The occurrence in Madagascar of one species, *Anchophthalmops menouxi* (Mulsant et Rey, 1853) needs confirmation Bilingual French-English identification keys to genera and species are presented

Famintinana

Ity laharana ity dia natokana hoan'ny fanavahana ara-tsokajy arahin-tsary ireo Coleoptera Platynotina eto Madagasikara. Ny Platynotina Malagasy dia mitsinjara ho vondrona telo lehibe· (I) taranaka Zidalus Mulsant sy Rey (karazana 3) ary ny Anchophthalmops Koch (karazana 1), izay hita eto Madagsikara sy any Afrika, (II) ny taranaka Lechius Iwan (karazana 3) tsy fahita afa-tsy eto Madagasikara; (III) ny vondron-karazana malagasy "Melanocratoïde" (taranaka 8, karazana 30) Ny Platynotina dia tafiditra ao anatin'ny karazana 37 ao am'n'ny taranaka 11. Mila alalinina ny fisian'ny Anchophthalmops menouxi (Mulsant et Rey, 1853) eto Madagasikara. Koa indro atolotra ireo teny fototra famantarana ny karazana sy ny taranaka am'n'ny teny frantsay sy anglisy.

Streszczenie

Zaprezentowano wyniki badań taksonomicznych malgaskich chrząszczy podplemienia Platynotina Obecnie, powyższy takson składa się z 3 głównych grup. (I) rodzaje *Zidalus* Mulsant et Rey (3 gatunki) i *Anchophthalmops* Koch (1 gatunek) występujące na Madagaskarze i kontynencie afrykańskim; (II) endemiczny rodzaj *Lechius* Iwan (3 gatunki) i

Source : MNHN, Paris

(III) malgaska grupa rodzajów "melanocratoid" (8 rodzajów, 30 gatunków) Ogółem Platynotina Madagaskaru skupiają 37 gatunków skupionych w 11 rodzajach. Dane o występowaniu na Madagaskarze gatunku *Anchophthalmops menouxi* (Mulsant et Rey, 1853) wymagają potwierdzenia Zaprezentowano dwujęzyczny, angielsko-francuski, klucz do oznaczania rodzajów i gatunków

Mots-clés

Coleoptera, Tenebrionoidea, Tenebrionidae, Pedinini, systématique, répartition, Madagascar.

Keywords

Coleoptera, Tenebrionoidea, Tenebrionidae, Pedinini, systematics, distribution, Madagascar.

Teny fototra

Coleoptera, Tenebrionoidea, Tenebrionidae, Pedinini, fanavahana ara-tsokajy, fitsinjarana ara-jeografia, Madagasikara.

Słowa kluczowe

Coleoptera, Tenebrionoidea, Tenebrionidae, Pedinini, systematyka, rozmieszczenie, Madagaskar.

Source : MNHN, Paris

Introduction

The tribe Platynotini was formally established by KOCH in 1953. Platynotini includes the genera earlier classified by MULSANT and REY (1853: 37) in the groups "Platynotaires", "Opatrinaires" and "Trigonopaires", or, according to Lacordaire's (1859: 233, 255) system, to the groups "Platinotides" and "Gonopides". In two subsequent papers, KOCH (1955, 1956) presented a division of Platynotini into subtribes (Anomalipina, Gonopina, Platynotina) and generic groups, as well as a revision of African genera. A paper on Madagascan Platynotini was to appear separately, as announced by KOCH (1956: 62) in a footnote: "The present paper does not deal with the Madagascan genera *Melanocratus*, *Styphacus* and *Madobalus*, a revision of which is in the press with the 'Mémoires Institut de recherche scientifique de Madagascar'"; the paper, however, has never appeared. Further revisions of African genera were presented by ENDRÖDY-YOUNGA (1988, 2000) and IWAN (1997b, 1998a-d, 1999a-c, 2000b, c, 2001a, b), of Oriental ones – by KASZAB (1975) and IWAN (1997a), and those from New World – by IWAN (1995a). In 2002, IWAN proposed a hypothesis on the phylogeny of Platynotini, based on cladistic analysis including all the known genera of the tribe. Three lineages were distinguished (cladograms 1-2): the phylogenetically closely related clades "trigonopoids" (South Africa) and "melanocratoids" (Madagascar), and the polyphyletic "platynotoids" (tropical Africa, Madagascar, Oriental Region and New World).

According to IWAN's division of subfamily Opatrinae (2004b), Platynotini (*sensu* KOCH, 1956) was demoted to the subtribe Platynotina of the tribe Pedinini.

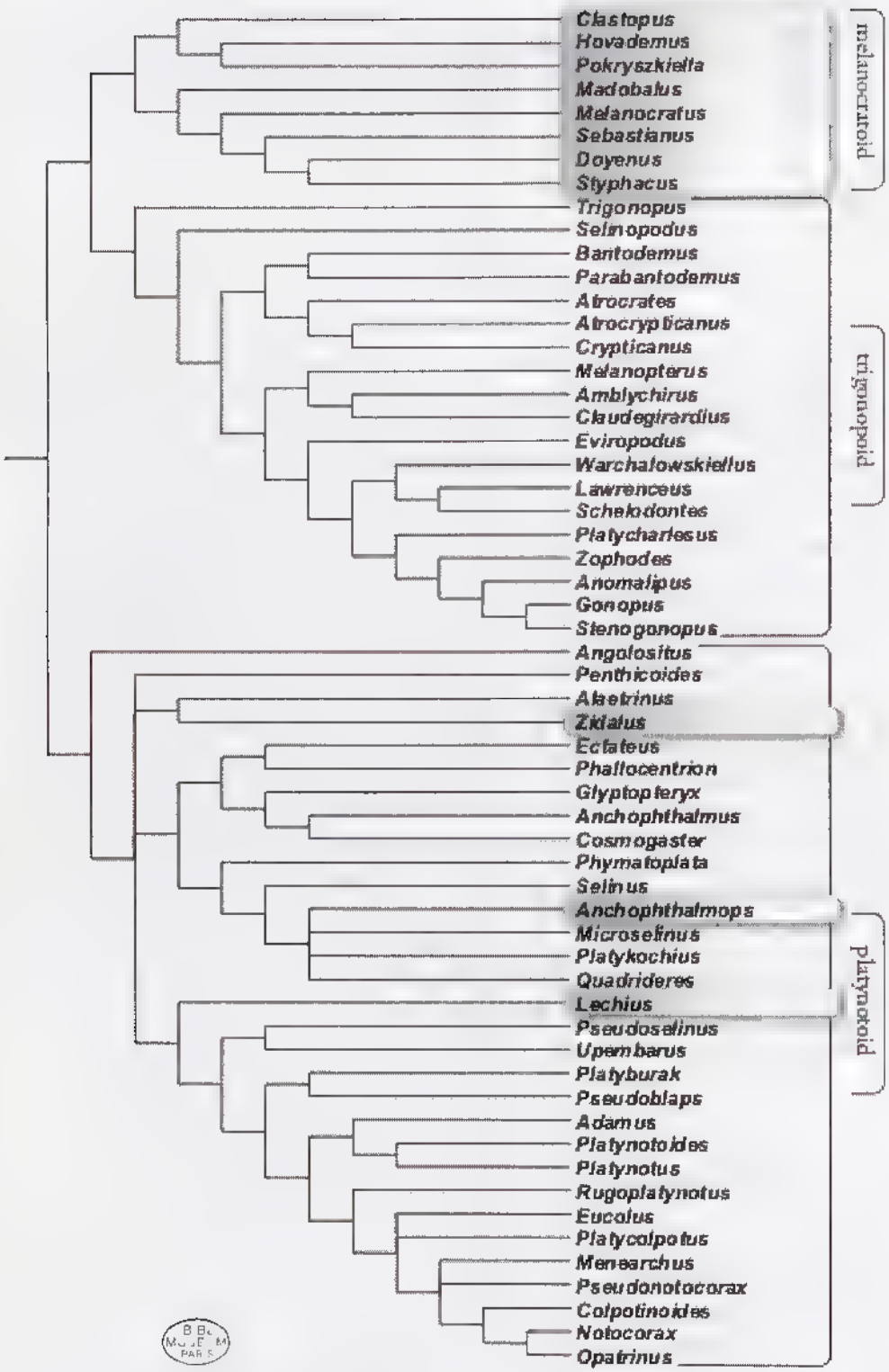
The catalogue of Platynotina (IWAN, 2002b) includes 58 genera and 460 species and subspecies distributed in tropical Africa and Madagascar, Oriental Region and New World (map 1).

History of studies on Madagascan Platynotina

Klug (1833). Description of *Opatrum attenuatum* Klug, 1833, the first species from Madagascar representing the Platynotini.

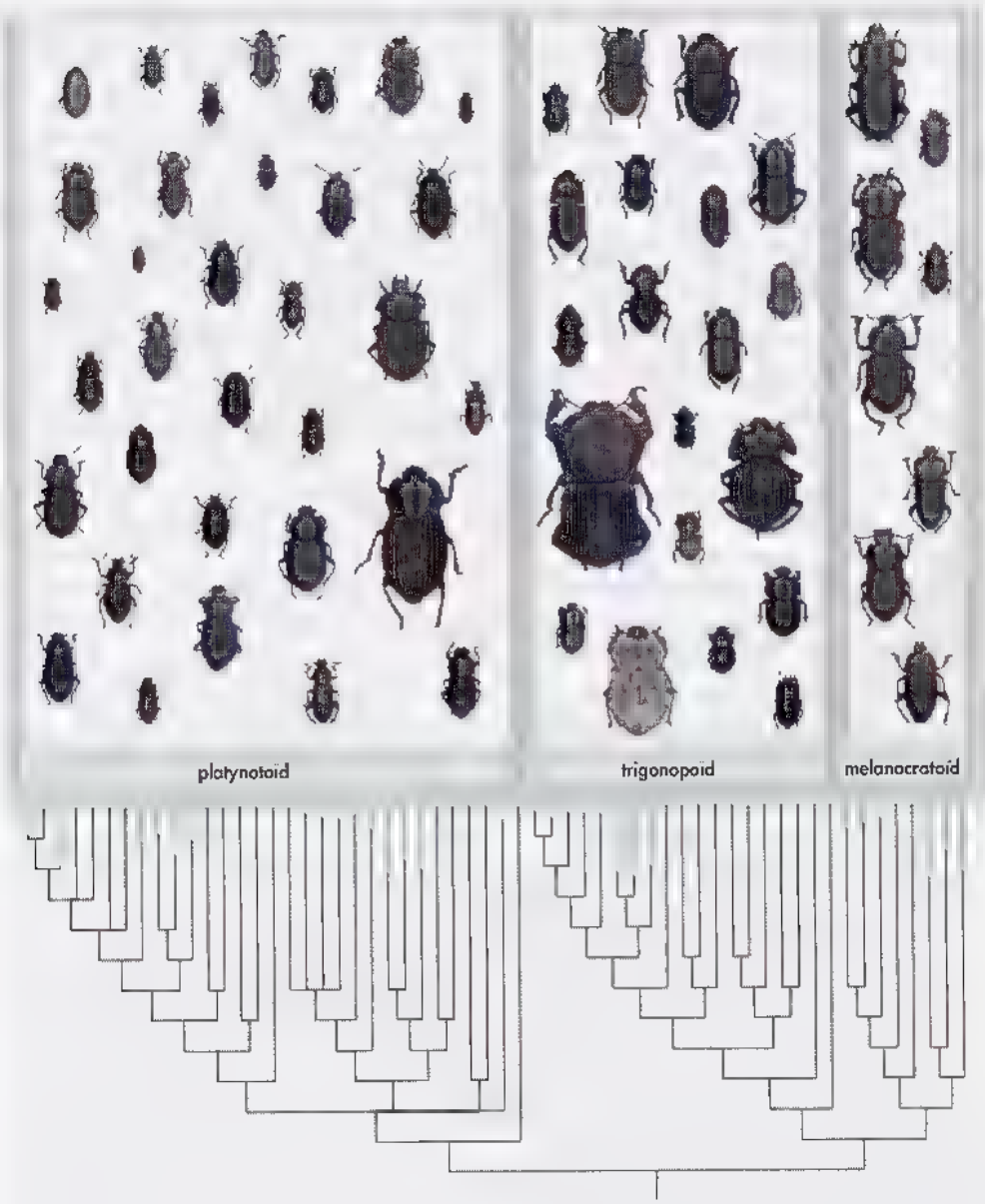
Mulsant and Rey (1853). This monumental publication deals with the higher-level systematics of the group "Parvilabres", which is treated as a family, subdivided into tribes and branches, with numerous descriptions of new taxa, re-descriptions and keys to tribes, branches, genera and species. The family "Parvilabres" *sensu* MULSANT and REY corresponds

Source : MNHN, Paris



Cladogram 1. Phylogeny of the subtribe Platynotina (after IWAN, 2002a). Taxa occurring in Madagascar in shaded boxes.

Source : MNHN, Paris



Cladogram 2. Three main development lineages of the subtribe Platynotina.

roughly to the subfamily Opatrinae *sensu* Koch (1956) and Medvedev (1968). Two new species of the genus *Opatrinus* Dejean were described from Madagascar (*madagascariensis* and *insularis*), as well as *Selinus menouxi*.

Gemminger and Harold (1870). Two species, *Hopatrinus insularis* Mulsant et Rey, 1853 and *H madagascariensis* Mulsant et Rey, 1853 are recorded from Madagascar; the spelling of *Opatrinus* is changed to *Hopatrinus* and the author – from Dejean to Latreille; *Selinus menouxi* Mulsant et Rey, 1853 with no reference to locality instead of distribution bears a note "incert. sedis"

Source : MNHN, Paris

Fairmaire (1893). Data on the occurrence of *Opatrinus madagascariensis* Mulsant et Rey (Mayotte, Madagascar) and *O. insularis* Mulsant et Rey (Grande Comore, Mayotte, Madagascar)

Fairmaire (1895). The first of a series of 5 papers in which the author describes genera and species (mostly in French or Latin) included at present in Madagascan Platynotini; there are no figures or identification keys, the descriptions are concise (e g. compared to those in the papers of Mulsant and Rey), hence the necessity to verify the names (given to species by Fairmaire), based on type materials. The paper contains the description of the monotypic genus *Melanocratus* with *M validipes* (Madagascan endemic).

Champion (1895). A species list which is a supplement to the 1870 catalogue by Gemminger and Harold; the author lists FAIRMAIRE's (1895) *Melanocratus validipes*.

Fairmaire (1898). The paper contains a description of the second (also monotypic) Madagascan genus, *Clastopus* with *C. eurynotoides*.

Fairmaire (1899). A description of the second species in the genus *Melanocratus* – *M. major*.

Fairmaire (1901). Another alpha-taxonomic paper with descriptions of Madagascan endemics: the monotypic genus *Madobalus* (with *M rotundicollis*) and the genus *Styphacus* (with *S Decorsii* oraz *S. humerosus*)

Fairmaire (1902). Fairmaire's last paper with descriptions of Platynotini from Madagascar: 4 new species of the genus *Melanocratus* Fairmaire (*M. amplicollis*, *M. convexicollis*, *M. neuter* and *M. ovoideus*) and 2 of *Selinus* Mulsant et Rey (*S. abacoides* and *S punctipennis*); all the species are endemic to Madagascar

Gebien (1910). The first edition of the World's catalogue of Tenebrionidae For Platynotini, the author listed from Madagascar 14 species representing 6 genera; in the catalogue they are placed in the subfamilies Pedininae and Opatrinae.

Chatanay (1913). The paper deals with Tenebrionidae of the Comoro Islands; two species are listed (at the time classified in the tribe Pedinini) *Opatrinus* (*Zodinus*) *insularis* Mulsant et Rey and *Opatrinus* (*Zodinus*) *madagascariensis* Mulsant et Rey

Gebien (1922). The author lists synonyms of *Opatrinus insularis* Mulsant et Rey, 1853 (= *Opatrinus ater* Müller, 1887) and *Opatrinus attenuatus* (Klug, 1833) (= *Opatrinus madagscariensis* Mulsant et Rey, 1853).

Gebien (1938). The largest and until now the most popular global catalogue of Tenebrionidae (second, improved edition), including 15 species (six genera). Changes compared to Gebien's 1910 catalogue pertain mainly to the classification – all the taxa are included in the tribe Pedinini. In their original description, Mulsant and Rey gave "Africa" with a question mark, but other specimens from the type series bear labels with Madagascar as the place of origin.

Gridelli (1947). A revision of African species of the genus *Opatrinus* Dejean (at present *Zidalus* Mulsant et Rey) containing descriptions, re-descriptions and an identification key to species and subspecies. In this paper, Gridelli provides pairs of subspecies (*O setuliger setuliger* Mueller and *O. setuliger camerunensis* Gridelli; *O. attenuatus attenuatus* and *O. attenuatus bottegoi*; *O. latipes latipes* Sahlberg and *O. latipes tanaensis* Gridelli; *O insularis insularis* Mulsant et Rey and *O. insularis somalicus* Gridelli, *O. niloticus niloticus* Mulsant et Rey and *O. niloticus zolotarevskyi* Español), where one member of the pair would

Source : MNHN, Paris

represent populations from the western part of Africa, the other – from its eastern part and Madagascar, or one member would be found on the continent, and the other on Madagascar.

Koch (1956). A revision of African Platynotini, including 3 species which are present also in Madagascar. *Opatrinus* (*Zidalus*) *insularis* Mulsant et Rey, *Opatrinus* (*Zodinus*) *attenuatus* Klug and *Selinus menouxi* Mulsant et Rey, Koch announces a separate revision of Malagasy endemics of the tribe.

Ardoin (1974). Based on materials collected in the massif Andringitra by the members of the CNRS expedition (October 1970-January 1971, within the project no 225, coordinated by R Paulian), the author describes an endemic Madagascan genus *Hovademus* with two species: *H. andringitrensis* and *H pauliani*; the description of the second species (placed in a footnote) is based on materials collected by R. Paulian in 1954 in Andohahelo (– Andohahela), later confirmed by a large series of specimens from the same locality in 1972 (Ardoin, 1976).

Iwan (1995b). A revision of the genus *Zidalus* Mulsant et Rey, earlier interpreted as a subgenus within *Opatrinus* Dejean; the taxon includes, among others, 3 species found in both Africa and Madagascar: *Z. insularis* (Mulsant et Rey, 1853), *Z. servus* (Mulsant et Rey 1853) (proposed new synonym *Opatrinus setuliger* Mueller, 1887) and *Z. attenuatus* (Klug, 1833)

Iwan (1995c). The paper contains a description of the new endemic genus *Lechius* Iwan, including 2 species. *Selinus abacoides* Fairmaire, 1902 and the newly described *Lechius steineri* Iwan, 1995.

Iwan (1996). The author distinguishes a group of "melanocratoid Platynotina" comprising 8 genera endemic to Madagascar The paper contains descriptions of new taxa (4 genera: *Hovademulus, Doyenus, Pokryszkiella* and *Sebastianus* and 14 species *Doyenus dentatus, D. uncus, Hovademulus ordinarius, H tenuiculus, Melanocratus fairmairei, M. ferreri, Pokryszkiella cornuta, Sebastianus magnus, S projectus, S. simplex, Styphacus bartolozzi, S kochi, S. nimius, S phreneticus*), re-descriptions (based on type material) of earlier described species, illustrations and an identification key to genera and species Based on cladistic analysis, generic hypotheses are verified and a hypothesis on the phylogeny of the group is proposed. Based on dissection of females (1st instar larvae were found in bursa copulatrix of 6 species) ovoviviparity is established in Madagascan Platynotini

Ferrer (1998). The paper contains descriptions of new species and faunistic data on Tenebrionidae of Madagascar; it includes 8 species of Platynotini.

Iwan (1998e). A description of a new species, *Hovademulus madagascariensis*, with a key to species of the genus *Hovademulus* Iwan, 1996.

Iwan (1999d). Descriptions of two new species, *Sebastianus endrodyi* and *S. madagascariensis*, with an identification key to all taxa included in *Sebastianus* Iwan, 1996 and analysis of character distribution within the geographical range of the genus.

Iwan (2000a). The paper deals with viviparity in beetles, ovoviviparity in Tenebrionidae is discussed, based on the 1st instar larvae described for the first time and originating from the bursa copulatrix of females of Madagascan Platynotini.

Iwan (2001c). A revision of the genera *Clastopus* Fairmaire and *Lechius* Iwan, with detailed figures and keys to species. Synonymising *Clastopus eurynotoides* Fairmaire, 1898 [type species of the monotypic genus *Clastopus* Fairmaire] (– *Selinus punctipennis* Fairmaire, 1902) [type species of the genus *Hovademulus* Iwan] results in synonymisation of the generic names *Clastopus* Fairmaire, 1898 (= *Hovademulus* Iwan, 1995)

Source : MNHN, Paris

Ferrer (2002). A description of a new species – *Styphacus iwani.*

Iwan (2002a). A revision of 58 genera constituting the tribe Platynotini. Based on cladistic analysis, the earlier hypothesis (IWAN, 1996) on the monophyly of the group of Malagasy endemic "melanocratoids" (sister group to S. African "trigonopoids") is confirmed, while the remaining taxa from Madagascar are found to belong to a polyphyletic group "platynotoids" with African mainland affinities.

Iwan (2002b). A catalogue of the World's Platynotini – including 11 genera with 33 species from Madagascar (14 nominal generic and 46 specific names).

Iwan (2004a). A revision of the genus *Styphacus* Fairmaire containing descriptions of 3 new species (*S. drugmandi, S. girardi* and *S. pauliani* Iwan), detailed diagnostic figures, distribution maps and an identification key to all known species

Iwan (2005). A description of a new species – *Clastopus aberlenci* and its first-stage larva.

Materials and Methods

Material examined

Since the publication of my first paper on Platynotina of Madagascar I have examined over 1,000 specimens of beetles, from 22 museum and private collections (see Abbreviations) A great part of the earlier examined material had to be re-examined in order to unify the descriptions, make new drawings, correct and improve identification keys, verify distribution data and make them more precise.

Internal structure of genitalia and larvae

The abdomen was treated with 10% KOH without heating during ca. 24 hours Following dissection of *genitalia* or other internal structures they were rinsed with distilled water and stored in glycerin, in plastic vials of 6 mm diameter and 12 mm length (purchased from BioQuip), pinned under the specimen and labels

In the case of female *genitalia*, some structures (bursa copulatrix and spermatheca) were stained with chlorazol black and figures were made immersed which allows membraneous parts (especially bursa copulatrix) to preserve their natural shape.

First instar larvae were obtained from the bursa copulatrix after removal and maceration in 10% KOH, and stained and stored as for female *genitalia.*

Camera lucida drawings were made under an Olympus SZX12microscope.

Adult morphology and morphometrics

The terminology adopted for morphology and anatomy of imagines and morphometric abbreviations used in the present Faune de Madagascar follows the standards presented in the revision of the genera of Platynotina (IWAN, 2002a).

Source : MNHN, Paris

The values of means and coefficients used in the descriptions of genera and species are based on earlier data and supplementary studies Where possible, at least eight to ten specimens were measured for each sex; in the case of *genitalia*, measurements were taken from one to three specimens of each sex

The measurements were taken with a threaded micrometer in the following way: width of the lateral flange of pronotum – in the middle of the lateral margin of pronotum; width of the base of elytra – from humeral angle to scutellum, body length – from anterior margin of labrum to apex of elytra; body width – the greatest width of elytra; pl – pronotum length measured in its middle; apl – pronotum length measured from the apex of anterior angles to the apex of posterior angles

Morphometric abbreviations

The abbreviations are presented in a sequence used in genus and species descriptions.
– pl/pb: pronotum – length/width ratio,
– el/eb: elytra – length/width ratio,
– el/pl: length ratio elytra/pronotum;
– eb/pb: width ratio elytra/pronotum;
– ew/ed: clypeus emargination – width/depth ratio;
– al/apl length ratio antenna/pronotum;
– al/was3: ratio antenna length/width of 3 antennomeres;
– as3/as2: length ratio antennomere 3/2;
– mp/as3· ratio width of maxillary palp/length 3 antennomeres;
– bp/lbp: width ratio pronotum/lateral flange of pronotum;
– pl/lapa: length ratio pronotum/anterior angles of pronotum;
– pkp/st· width ratio anterior margin of elytra/base of scutellum;
– ml/mw: metepisternum – length/width ratio,
cavl/metl: length ratio metasternum between acetabula of mid and hind coxae/acetabula of hind coxae;
– ftibl/ftibw: fore tibia – length/width ratio,
– ffeml/ffemw. fore femur length/width ratio; tars1/2. length ratio tarsomere 1/2,
– dtk/dod. hind tibia ratio of width of posterior margin/length of inner spur;
– pav/pm: width ratio of first abdominal ventrite/metasternal process;
– lfb/lo· length ratio female body/ovipositor,
– p/c: length ratio paraproct/coxites;
– tc/2bc1· coxites – ratio total length/2 x first coxite width;
– bc1/lc1· first coxite – width/length ratio,
– lc1/lc2: length ratio first/second coxite;
– c3/c3-c4. coxite – ratio length of third coxite/distance between bases of third and fourth coxites;
– c4-c3/c1: coxite – ratio length of first coxite/distance between apices of third and fourth coxites;
– lmb/la: length ratio male body/aedeagus;
– lbp/lap: aedeagus – length ratio basal/apical part.

Source · MNHN, Paris

Distribution

The list of localities for each species and usage of the locality names based on VETTE (1991), the division of zoogeographical *"régions"* is presented after HUMBERT (1955).

Abbreviations

BMNH: The Natural History Museum, London, U. K.
HNHM. Hungarian Natural History Museum, Budapest, Hungary.
IRSN. Institut royal de sciences naturelles, Bruxelles, Belgique.
JFCS· Julio Ferrer Collection, Haninge, Sweden.
LSCM: Collection Laurent Soldati, Montpellier, France.
MHNG: Musée d'histoire naturelle de la ville de Genève, Suisse
MIIZ· Muzeum i Instytut Zoologii, Polska Akademia Nauk, Warsawa, Poland.
MNHN. Muséum national d'histoire naturelle, Paris, France.
MRAC: Musée royal de l'Afrique centrale, Tervuren, Belgium.
MZUF: Museo Zoologico dell'Universita de Florenze, Florence, Italy.
NHMB: Naturhistorisches Museum, Basel, Switzerland.
NHRS: Naturhistoriska Riksmuseet, Stockholm, Sweden.
NMB: National Museum, Bloemfontein, Republic of South Africa.
NMPC: National Museum, Prague, Czech Republic.
RGCT: Roland Grimm Collection, Tübingen, Germany.
SBBC: Stanislav Bečvář Collection, Ceské Budějovice, Czech Republic.
TMNH Transvaal Museum of Natural History, Pretoria, Republic of South Africa.
USNM: National Museum of Natural History, Smithsonian Institution, Washington, USA
ZMAN: Intituut voor Taxonomische Zoölogie, Zoölogisch Museum, Universiteit van Amsterdam, Netherlands.
ZMHB. Museum für Naturkunde der Humboldt–Universitat, Berlin, Germany.
ZMUC· Zoological Museum, University of Copenhagen, Copenhagen, Denmark
ZSMA: Zoologisches Staatssammlung, Munchen, Germany [in permanent loan to] Prof. Hans J Bremer.

BIOLOGY

Species of the genus *Zidalus* Mulsant et Rey are found throughout the year in very varied habitats, they are alate species showing also nocturnal activity (attracted by light at night); they were collected in crop fields (most often in the substratum, on the soil) and nature reserves: "Réserve naturelle intégrale n° 4, du Tsaratanana (Ambanja)" – with the highest mountains on the island (2,884 m), where high mountain habitats are protected. Species of *Zidalus* Mulsant et Rey are found at 1,000 m a s l. (in Africa even up to 2,010 m); "Réserve naturelle intégrale n° 7, de l'Ankarafantsika (Ambato Boéni)" – where lowland tropical forest is protected, the genus *Lechius* Iwan inhabits dry habitats (bush, savanna), the beetles are

Source : MNHN, Paris

mainly found from December till March, on the ground (loose, sandy soil, under a layer of leaf litter and dead timber), in partly shaded places, up to 500 m a.s.l.

Species of the "melanocratoid" group are found throughout the year, most often from September till May, in lowlands and in uplands up to 1,000 m (dry forest, bush, savanna), and in high mountain areas from 1,400 to 2,500 m [e.g. "Réserve naturelle intégrale n° 5, de l'Andrigitra (Ambalavoa)"].

Madagascan Tenebrionidae viviparity

According to BONTEMS (1985) viviparity in Chrysomelidae appeared several times independently and, contrary to what was postulated by other authors, is not associated with their occurrence in the mountains (it is completely independent from climatic conditions).

In the case of Tenebrionidae I only partly share Bontems's view. In my opinion in Platynotina the development of viviparity is to a large extent associated with environmental conditions, but acquisition of viviparity had a crucial effect on the phylogeny of the Madagascan group of melanocratoid Platynotina and may be, to some degree, treated as a phylogenetically important character. Within the distribution area of the subtribes Platynotina and Eurynotina in South Africa and the south-western part of Madagascar, annual rainfall is on an average 400-1,000 mm, and in some areas of Madagascar below 400 mm; both humidity and temperature show great diurnal and annual amplitudes. The areas are not, however, classified as deserts: in extreme cases they are semi deserts (most often fynbos and karoo).

The biology of beetles of the genus *Anomalipus* has been studied and described in great detail (ENDRÖDY-YOUNGA, 1988, ENDRÖDY-YOUNGAAND TSCHINKEL, 1993) – the genus is very closely related to viviparous members of the generic groups trigonopoids (S Africa) and melanocratoids (Madagascar). The beetles are among the largest tenebrionids (up to 38 mm in length), are devoid of wings but are very efficient migrants, both as species and as individuals. Numerous field and laboratory studies made it possible to establish that: they are long-lived (for insects) – single females in captivity lived for ca. 6 years (closely related genus *Gonopus* 8 years), in adverse conditions, in the night or during cold and dry winter months, they bury themselves in the substratum and hibernate According to Endrody-Younga, females lay eggs during five months of the year, as few as 2-18 per season (mean per individual 9.2), the females can store viable sperm in the spermatheca for a long time, up to 19 months since their last copulation, dissected females were found to contain single, large eggs (this was confirmed by observations in laboratory culture).

Table I. Major axis of egg as a percentage of length of body female (from vertex of head to tip of abdomen) (HINTON, 1981).

Tenebrionidae	11.56
Staphylinidae	13.90
Dermestidae	16 84
Lathridiidae	26 98
Anisotomidae	34.60

Source : MNHN, Paris

Table II. Egg dimensions and the ratio lengths female/egg in some species of the Tenebrionidae, [(*) – ovoviviparous species; (1) – date after ENDRÖDY-YOUNGA (1988)].

Bantodemus mariepsus	10.3
Bantodemus imitator	12.3
Bantodemus typhon	12.3
Bantodemus tristis	12 6
Bantodemus vescus	16 1
Melanopterus varus	16.7
Bantodemus lucidus	16 9
Anomalipus expansicollis[1]	17.0
Hovademus pauliani	17.7
*Styphacus decorsei**	18 0
*Melanocratus validipes**	19.8, 25.5, 21 8
Anomalipus plebejus	20.0
*Styphacus neuter**	20 8
*Sebastianus major**	23.1
Anomalipus braini[1]	30 0
*Melanocratus fairmairei**	36 0

The results of my studies show that actually much higher values for egg size than those reported by HINTON (1981) are observed in Tenebrionidae (Tables I and II). In this respect tenebrionids resemble families whose representatives are storehouse pests adapted to extremely adverse conditions.

Probably, the tendency to increase egg size is associated with adaptation to environmental conditions – low humidity and large diurnal amplitude of temperature (low in the night, high in the daytime). Thus, they acquire a favourable, low surface/volume ratio (this adaptation has nothing to do with viviparity).

An opposite tendency is observed in chrysomelids – the egg size decreases. A decrease in the number of produced eggs is also a general tendency among viviparous insects – BROVDY (1970) observed females of viviparous chrysomelids to give birth to 32-54 larvae during 20 days, LEBHERR and KAVANAUGH (1985) report an average of 32-34 (ca 60-70) for carabids.

Based on these data, it can be conjectured that in Tenebrionidae an increase in egg size, decrease in the number of eggs and increase in the life span of females took place independently from modifications of embryonic development However, they are associated with such modifications and constitute crucial preadaptations to viviparity. The ability to hibernate in response to adverse environmental conditions (seasonal and diurnal in the case of the genus *Anomalipus*), and egg-laying being dependent on favourable conditions [according to field observations after a rain] may have caused the hibernating female to "have an influence" on retention of mature eggs inside the bursa copulatrix. Considering that the conditions inside the mother's organism do not cause inhibition of embryonic development, it can be envisaged how a sequence of "accidental" egg-retaining events could lead to fixation of such a mechanism. Besides the advantages of parental care (protection of developing embryos is one of the forms of parental care), there are additional advantages to starting active life as a newborn larva. The active larva can avoid the effect of unfavourable conditions due to horizontal and vertical migrations.

Considering the possibilities of evolution of ovoviviparity further, a next stage is easy to identify – adenotrophic viviparity (a single larva leaves egg envelopes inside the mother's oganism and stays there feeding on secretions of special glands), a mechanism found also in ovoviviparous Blattodea

Source : MNHN, Paris

My studies on evolutionary tendencies in the structure of the female reproductive system indicate clear changes in the development of particular components of the ovipositor in ovoviviparous and related oviparous species (producing large eggs). The changes involve a considerable shortening of paraproct (reduction of its anterior margin, low value p/c), and coxite I (very narrow, transverse, high value bc1/lc1) as a result of which ovipositor becomes triangular with a rather wide base (low value tc/2bc1) (Tables III and IV). These are adaptations to laying large eggs or to larviposition. Viviparous species of the genus *Eurynotus* (Eurynotina) depart from this scheme (very much elongated paraproct) which is probably dependent on the kind of oviposition or larviposition substratum A similar interpretation may apply to the deviation from the oviparous structure of ovipositor in species of the genus *Zidalus* (oviparity) (see Table IV) Coxite I is much shortened (bc1/lc1 3 0-3 6), but fairly narrow (much widened in viviparous species), hence the coxites are rather elongate and not triangular (thus value tc/2bc1 exceeds 1)

Transition from production of large eggs to ovoviviparity was associated with further modifications in the structure and physiology of the female reproductive system (which may be a subject for future studies on this group of insects). It follows from table III that the best indicators of viviparity (as evolutionary tendency) may be. 1) length ratio ovipositor/egg (below 0.5), the value is independent from shortening of paraproct (see ratio p/c) and consequently also ovipositor, 2) shape of coxites I (bc1/lc1 exceeding 3). These features clearly characterise the most speciose genera (*Styphacus* and *Sebastianus*) and support the hypothesis that viviparity was among the phenomena driving speciation, and significantly ensured reproductive success and thus survival of species or developmental lineages in the case of Platynotina (see Taxonomic and biogeographic remarks).

Table III. Relation between female body length, ovipositor structures and egg dimensions in Platynotina; (*) trigonopoid group, (**) melanocratoid group.

Species	Female body length [mm]	Egg dimensions [mm]	Ovipositor length [mm]	Length ratio female body/egg	Length ratio ovipositor/ egg	Length ratio female body/ ovipositor	First plate of coxite-width/ length ratio (bc1/lc1)	Length ratio paraproct/ coxites (p/c)	Paraproct length/ width ratio (tc/2bc1)
*Sebastianus major***	19 5	4 5x2 4	2 0	4.3	0 44	9 6	4 2	1 0	0 7
*Melanocratus fairmairei***	13 9 15 5	5 0x2 6 3 1x1.5	1 7 1 9	3 9	0 48	8 0	3 3	1 1	0 7
*Styphacus neuter***	17 8	3 7x1 8	2 5	4 8	0 68	7.1	3.3	0.9	0 8
*Melanocratus validipes***	19 7 18 8 19 7	3.9x2 3 4 8x2 6 4 3x2 2	3 3 3 1 3 2	4 5	0 74	6 0	3 0	1 1	0 7
*Styphacus decorsei***	20.0	3 6x1.7	2 9	5 6	0 80	6.8	2 6	1 2	0.8
*Styphacus phreneticus***	21 3	3 4x2 0	2 9	6 2	0 85	7 4	2 7	1 1	0 8
*Hovademus pauliani***	13 0	2 3x1.2	2.3	5.7	1 00	5 6	2 0-2.2	1.0	0 9
*Clastopus tenuculus***	8 8	2 1x1.4	2.2	4 2	1.05	4 0	2 5	1 1	0 8
*Clastopus ordinarius***	13 7	2.1x1 2	2 3	6.5	1.10	6.0	2 4	1.35	0.9
*Clastopus aberlenci***	14 2	2 3x1 5	2 6	6 2	1 13	5.5	2.3	1.3	0.9
*Anomalipus plebejus**	18 0	3 6x2 1	2 6	5 0	0 72	6.6-7 5	1 9-3 0	0 9	0 6-0 7
*Bantodemus imitator**	11 4	1.4x0 9	2 3	8 1	1 64	4.6-6 2	1 5-2 3	1 3-1.6	0 8-0.9
*Melanopterus varus**	21.5	3 6x2 4	3 7	6 0	1.03	5 5-6 0	1 9-2 9	0.7-0 8	0 8-0 9

Source : MNHN, Paris

Table IV. Relation between female body length and ovipositor structures in Malagasy and African Platynotina (Afr.); (*) ovoviviparous genera of melanocratoid group.

Genus	Length ratio female body/ovipositor		First plate of coxite-width/length ratio (bc1/lc1)		Paraproct-length/width ratio (tc/2bc1)	
	min.-max.	mean	min.-max.	mean	min.-max.	mean
Lechius	5.0	5.0	1.5-1.7	1.6	1.03-1.40	1.22
Anchophthalmops	4.5-6.0	5.3	1.5-1.7	1.6	1.1-1.2	1.15
*Hovademus**	5.6	5.6	2.0-2.2	2.1	0.9	0.90
Trigonopus (Afr.)	6.3-6.6	6.5	2.0-2.6	2.3	0.8	0.80
*Pokryszkiella**	6.6-6.9	6.8	2.3	2.3	0.9	0.90
Anomalipus (Afr.)	6.6-7.5	7.0	1.9-3.0	2.3	0.6-0.7	0.65
*Clastopus**	4.0-6.0	5.0	2.3-2.5	2.4	0.8-0.9	0.85
*Melanocratus**	5.5-8.0	6.8	2.5-3.3	2.9	0.7-0.8	0.75
*Madobalus**	8.8	8.8	3.1	3.1	0.8	0.80
Zidalus	5.8-7.5	6.7	3.0-3.6	3.3	1.0-1.1	1.05
*Styphocus**	6.7-9.1	7.9	2.6-4.2	3.4	0.7-0.9	0.80
*Doyenus**	6.6	6.6	3.5	3.5	0.8	0.80
*Sebastianus**	7.6-11.0	9.3	3.5-4.7	4.1	0.7	0.70

Source : MNHN, Paris

Subtribe Platynotina Koch

Platynotini Koch, 1953: 268.
Platynotina. Iwan, 2004b: 737; Bouchard *et al.*, 2005: 502.

Type genus

Platynotus Fabricius, 1801; original designation.

Systematic position and diagnostic characters

In 1995, LAWRENCE and NEWTON presented a new division of Tenebrionidae into eight subfamilies. The new system is based on results of phylogenetic analyses presented by DOYEN and TSCHINKEL (1982) and earlier discussion on the higher classification of Tenebrionidae (WATT, 1967, 1974; DOYEN, 1972, DOYEN and LAWRENCE, 1979; DOYEN *et al*, 1990).

According to the new classification a part of the subfamily Opatrinae (*sensu* KOCH, 1956, MEDVEDEV, 1968) is regarded as tribe Opatrini within Tenebrioninae (DOYEN *et al.*, 1990), while some tribes were excluded from it and are now separate taxa (e.g Heterocheirini, Leichenini). In spite of my numerous objections to the selection of taxa (not sufficiently representative for Africa and Palaearctic) for the analyses carried out by DOYEN and TSCHINKEL (1982), and the fact that analyses and results of studies on the subfamily Opatrinae by such authors as ESPAÑOL (1945), KOCH (1956), MEDVEDEV (1968), REICHARDT (1936) were not fully used, I think that the classification presented by LAWRENCE and NEWTON (1995) best reflects current knowledge of the Tenebrionidae.

The main problem is not whether Opatrinae should be regarded as tribe, or subfamily, but if they are monophyletic at all. Originally, Opatrinae were distinguished mainly based on the structure of clypeus (with anterior margin emarginate), this character is very variable and should be regarded as convergence In his revision of African Opatrinae, KOCH (1956) did not provide a diagnosis of the subfamily, and MEDVEDEV (1968) presented a complex of characters which are to variable too be used as key characters or as a basis to formulate hypotheses of synapomorphy, but both these authors showed that it was very easy to distinguish lower taxa, e g. tribes or subtribes The best criterion to distinguish these taxa (which are highly likely to be monophyletic) is the structure of the male copulatory apparatus

Source : MNHN, Paris

I think, that irrespective of the results of future studies and taxonomic decisions on the hypotheses on the monophyly of Opatrinae (as subfamily or tribe), the results and conclusions of a systematic revision of a natural taxon (whether it is the tribe Platynotini or subtribe Platynotina) will always be true (e.g. phylogeny) and useful (diagnoses, descriptions, keys) Recently, BOUCHARD *et al.* (2005) proposed a new classification of the family Tenebrionidae. They accepted the former division of Opatrini and Pedinini proposed by IWAN (2004b), and confirmed that the Platynotina ought to be interpreted as a subtribe belonging to the tribe Pedinini, subfamily Tenebrioninae.

Platynotini have a visible intersegmental membrane between abdominal sternites (III and IV, IV and V); clearly emarginate anterior margin of clypeus (except S. African genera *Stenogonopus* Gebien and *Gonopus* Latreille); stridulated gula (shared with the sister tribe Eurynotina). They form a well-circumscribed monophyletic group characterised by a specific structure of male copulatory apparatus: the presence of lacinia and their modified junction with the apical part of the tegmen (inward rotation around the axis), Eurynotina have no lacinia (probably secondarily reduced), and elytral intervals bear tubercles (well developed in their posterior part).

The Madagascan endemics of the tribe Platynotina are characterised by very specific, unusual features (synapomorphies), not found in other representatives of the tribe: the "melanocratoid" group by a very deep emargination of the anterior margin of the clypeus and a specific structure of mentum (median keel shortened, massive, blunt); the genus *Lechius* Iwan by a narrow, deep gutter at the lower margin of the eye.

Larval morphology

Taxonomic considerations

At present, because of the small number of known larvae, larval characters are more useful for defining taxa and performing phylogenetic analyses at a higher level i.e families, subfamilies, rather than for a complete phylogenetic analysis.

Moreover, the strict dependence between the structure of the larva and the environment in which it lives results in multiple, independent similar adaptations in various species (SCHULZE, 1962, 1964, 1969, 1978). For this reason, results of phylogenetic analyses are difficult to interpret (numerous homoplasies), and the characters are useful for constructing keys rather than for defining monophyletic groups

The classification of Tenebrionidae is still based mainly on imaginal characters In 1974 WATT, when distinguishing subfamilies, used 21 imaginal and 15 larval characters, but already in 1982 DOYEN and TSCHINKEL analysed only seven larval characters (out of the total of 80 characters used)

Since little information on the larvae is available (in the subtribe Platynotina only 33 species, see Table V, out of nearly 500 described based on imagines), each description of a larva is very valuable. To make the description clear and useful it is necessary to follow a well-tested standard comprising characters which would permit both species identification and phylogenetic inferences. In my studies the adopted standard includes procedures, description structure and nomenclature contained in LAWRENCE (1991)

Egg details

The shape is elongate-ovate, whitish and shiny; for dimensions, see table III; chorion without any peculiar structures visible under x 100 magnification.

Source : MNHN, Paris

Table V. List of species (Platynotina) with known larvae.

Species	References	Distribution
Anomalipus acutangulus	IWAN and BANASZKIEWICZ (2006)	S Africa
Anomalipus braini	IWAN and BANASZKIEWICZ (2006)	S Africa
Anomalipus elephas tibialis	IWAN and BANASZKIEWICZ (2006)	S Africa
Anomalipus expansicollis thoracicus	IWAN and BANASZKIEWICZ (2006)	S Africa
Anomalipus mastodon	IWAN and BANASZKIEWICZ (2006)	S Africa
Anomalipus meles	IWAN and BANASZKIEWICZ (2006)	S Africa
Anomalipus multilineatus	IWAN and BANASZKIEWICZ (2006)	S Africa
Anomalipus planus	IWAN and BANASZKIEWICZ (2006)	S Africa
Anomalipus plebejus	JACK (1918), IWAN and BEČVÁŘ (2000)	S Africa
Anomalipus sculpturatus	IWAN and BANASZKIEWICZ (2006)	S Africa
Anomalipus seriatus	IWAN and BANASZKIEWICZ (2006)	S Africa
Anomalipus urus	IWAN and BANASZKIEWICZ (2006)	S Africa
Bantodemus zulu	SCHULZE (1964)	S Africa
Clastopus aberlenci	IWAN (2005)	Madagascar
Gonopus agrestis	SCHULZE (1962)	S Africa
G. angusticostis	SCHULZE (1978)	S Africa
G. hirtipes	SCHULZE (1978)	S Africa
G. pliciventris	SCHULZE (1978)	S Africa
G. tibialis Fabricius	SCHULZE (1962)	S Africa
G. transvaalensis	SCHULZE (1978)	S Africa
Melanocratus ferreri	IWAN (2000a)	Madagascar
Opatrinus aciculatus	IWAN (1995a)	N America
O. gibbicollis	IWAN (1995a)	Central America
O. minimus	IWAN (1995a)	N America
Pseudoblaps amplicata	SKOPIN (1972)	Oriental Region
Quadrideres femineus	SCHULZE (1964)	S Africa
Sebastianus major	IWAN (2005)	Madagascar
Sebastianus ovoideus	IWAN (2005)	Madagascar
Sebastianus projectus	IWAN (2000a)	Madagascar
Sebastianus simplex	IWAN (2000a)	Madagascar
Styphacus bartolozzi	IWAN (2000a)	Madagascar
Styphacus kochi	IWAN (2000a)	Madagascar
Zophodes fitzsimonsi	SCHULZE (1964)	S Africa

First instar larva

The description is based mainly on a fully developed 1st instar larva of *Sebastianus simplex* IWAN (pl. 27, figs 510-521) which is 12.0 mm long, sss1.4 mm wide, head capsule 1.2 mm broad; the examined specimens belong to *Clastopus aberlenci* Iwan (pl. 28, figs 522 526), *Sebastianus ovoideus* (Fairmaire) (pl 28, fig 527), *Sebastianus projectus* Iwan (pl 26, figs 508-509, pl 28, fig 528), *Styphacus bartolozzii* Iwan (pl 28, fig 529), *Styphacus kochi* Iwan (pl. 28, fig. 530) and *Melanocratus ferreri* Iwan (pl. 28, fig. 531).

Body subcylindrical; cuticle ivory-colored, apices of mandibles and tarsungulus strongly sclerotized, darker. Egg-bursters absent

Head prognathous (pl. 27, fig 510), cranium transverse, slightly convex, narrower than pronotum, sides rounded. Epicranial suture Y-shaped, stem short, about seven times shorter than length of head capsule (measured from occipital foramen to frontoclypeal suture), frontal arms extend to antennal insertion; an additional oblique anteromedial ecdysial line branches off from each arm and extends toward the middle of the frontoclypeal suture. Antennae 3-segmented (pl 27, fig 518), second antennomere is 1 7 times longer than first, segment 3 minute, about 1/3 diameter of second, bearing subapical circlet of three short setae and a stout, longer apical seta, apical area of segment 2 occupied by a sensillum (an incomplete

Source : MNHN, Paris

ring around the base of segment 3); antennal insertion lateral, separated from the mandibular articulation by a narrow strip of membrane. Stemmata absent. Frontoclypeal suture distinct. Clypeus trapezoidal, about 2 times wider than long (pl. 27, fig 512); the postclypeus with two setae latero-medianly on each side. Labrum transverse, with four setae along anterio-lateral margin on each side and two long setae in the centre. Epipharynx transverse-ovate; eight short spines along anterior margin, a pair of short spines in the centre, two lateral strongly sclerotized setose patches below, a pair of triangular posterior plates (pl 27, fig. 511) Mandibles asymmetrical, protruding laterally; the bifid obtuse apices sclerotized and dark-coloured; right molar part prominently produced; on both mandibles ventrally one seta near the medially broken curve of its exterior contour, and another two setae at base (pl 27, figs 516, 517) Maxilla with well-developed transverse cardo (pl. 27, fig 513); elongate stipes bear 4 long setae; 3 segmented maxillary palpus: first segment subquadrate, second one 1 5 time longer than first (and bears three setae anteriorly), segment 3 conical, and slightly longer than first; mala with an inner surface densely covered by strong spines, and slightly notched at the inner apical angle Labium with distinct prementum, mentum and submentum (pl 27, figs 514, 515), gula weakly developed; ligula with two setae on the tip, labial palps 2-segmented, second segment conical with setose area on apex; mentum elongated, with pair of setae at base and 4 others medially. Hypopharynx densely setose medially, with tricuspidate hypopharyngeal sclerome Prothorax subquadrate, 2 times longer than meso- or metathorax. Fore legs longer and stouter than mid and hind legs (pl. 28, fig. 525), setal arrangement as in fig 519 (pl. 27), fore coxae nearly subquadrate, with strongly convex ventral margin, trochanter elongated, anteriorly with two heavily sclerotized tubercle; inner margin of femur subrectangularly bent, with one strongly sclerotized tubercles, tibia elongated, somewhat longer than tarsungulus, with one tubercle; tarsungulus wide, spade-like, strongly sclerotized, with 2 setae (not divided). Abdomen with ninth sternum reduced (pl. 27, fig. 520); pygopodia well visible; ninth abdominal notum broadly heart-shaped, with 8 short spines along apex (2 median ones stouter than the other) (pl. 27, fig 521).

A general description of the first-stage larvae of the remaining species corresponds to the presented description of *Sebastianus simplex* The differences involve mainly the number and shape of spines on the ninth abdominal notum (pl. 28, figs 527-531) and the presence of egg-bursters (Table VI). When the latter structure is present, it is located on the notum of thorax and abdomen as a pair of sharp denticles (pl. 28, figs 522, 523, 527). The last abdominal segment in not fully mature larvae is multiple, concentrically wrinkled and flattened (pl. 28, figs 522, 524), only later does it assume a cylindrical shape (pl. 26, fig. 509).

Table VI. Dimensions and diagnostic characters of the 1st instar larvae belong to Malagasy Platynotina.

Species	Female body length [mm]	Larval body length [mm]	Head capsule width [mm]	Egg-bursters	Number of spines on the IX abdominal notum
Clastopus aberlenci	14.2	4 2	0.6	present	2
Melanocratus ferreri	16 5	11 5	1.3	present	2
Sebastianus major	20 3	9.4	1 0	present	6
Sebastianus ovoideus	18.1	7 2	1 0	present	2
Sebastianus projectus	17 5 18 5	8 0 7 0	1 0 1 0	present	4
Sebastianus simplex	17.5	12 0	1.2	absent	8
Styphacus bartolozzi	14 5 15 5	10 0 10 5	1 2 1.2	absent	4
Styphacus kochi	18.5	4.5	0.7	present	4

Dariusz WAN

Source : MNHN, Paris

Clé d'identification des genres malgaches

1. Ailes complètement atrophiées ; métasternum court (cavl/metl > 1,2) **2**

— Ailes bien développées ou partiellement atrophiées (pl 4, fig 59, 69) , métasternum long (cavl/metl " 1,2) ..... ***Zidalus*** Mulsant et Rey

2. Marge postérieure de l'œil sans sillon (pl. 7, fig. 110) **3**

— Marge postérieure de l'œil avec un étroit sillon (pl. 3, fig. 36) .. ***Lechius*** Iwan

3. Antenne courte ou modérément longue (al/apl = 0,60 0,95) , mentum avec une carène médiane courte, n'atteignant pas la marge antérieure (pl. 6, fig 104) , disque du pronotum lisse (pl. 6, fig. 105) **4**

— Antenne longue (al/apl = 1,10-1,60) , mentum avec une carène médiane longue, atte'gnant la marge antérieure (pl 1, F'g 3) ; disque du pronotum avec une paire de dépressions longitudinales à la base (pl 1, fig 4) . . ***Anchophthalmops*** Koch

4. Bord antérieur du clypéus fortement concave (ed/ew " 5), simple (pl 15, fig. 290) , marge externe de la mandibule simple.... . . .. **5**

— Bord anterieur du clypéus légèrement concave (ed/ew ca 6), avec des tubercules (pl 14, F'g 263) , marge externe de la mandibule avec une protubérance .... ***Pokryszkiella*** Iwan

5. Mentum élargi antérieurement (pl 7, fig 124) , angles postérieurs du pronotum n'atte'gnant pas le niveau du milieu de la base, les rebords des marges antérieures et postérieures du pronotum étant interrompus au milieu (pl 9, F'g 159) , scutellum étroit (pkp/st = 4,0 5,6) (pl 9, fig 162) , tibia antérieur plus étroit (ftibl/ftibw > 3,5) (pl 10, fig 164) ; tibia médian du mâle moins fortement élargi vers l'apex (pl 10, fig. 166, 167) **6**

— Mentum plus étroit antérieurement (pl 11, fig 194) ; angles postér'eurs du pronotum dépassant le niveau du milieu de la base, les rebords des marges antérieures et postérieures du pronotum étant plus larges au milieu (pl 11, F.g 195) , scutellum large (pkp/st = 1,7-3,7), sauf chez *Melanocratus fairmairei* (pkp/st ca 4 6) (pl 9, fig 144) , tibia antérieur nettement élargi vers l'apex (ftibl/ftibw " 3,5 , chez *Melanocratus ferreri* ca 4,0) (pl. 9, fig 147) , tibia median du mâle très élargi vers l'apex (pl. 9, fig. 148, 149)..... . . . . .. **7**

6. Rebord de la marge antérieure du prosternum complet , rebord de la saillie prosternale plus étroit (pl. 8, fig. 127)..... ***Clastopus*** Fairmaire

— Rebord de la marge anterieure du prosternum effacé au milieu , rebord de la saillie prosternale plus large (pl. 10, fig. 176)..... ..... ***Hovademus*** Ardoin

7. Antenne courte (al/apl = 0,60-0,80) et robuste (al/was3 < 15), segments apicaux 7-11 transverses (pl 16, F'g 309) , épipleure élargi au niveau des sternites 3-4 (pl 17, fig 323) , tarses postérieurs modérément longs (tars1/2 < 2 5) , face externe des tibias médians avec deux carènes ou des denticules (pl. 16, fig. 303, 304) **8**

— Antenne modérément longue (al/apl ca 0,90) et grêle (al/was3 > 15), segments ap'caux 7-11 allongés (pl 11, fig 193) ; épipleure non élargi vers l'apex (pl 11, fig. 197) , tarses postérieurs longs (tars1/2 ca 2 6) (pl 11, fig 201) , face externe des tibias médians inermes (pl 11, fig 205, 206) . . ***Madobalus*** Fairmaire

Source : MNHN, Paris

8. Épaule rebordée (pl. 15, fig. 292) , marge externe du tibia antérieur de la femelle avec deux fortes dents (apicale et médiane) (pl. 15, fig 282), celles du tibia antérieur du mâle plus grêles (pl. 15, fig. 281) ; tibia médian du mâle élargi, le bord externe avec de petits denticules (pl. 15, fig. 283, 284) **9**

— Épaule non rebordée (pl. 12, fig. 215) ; marge externe du tibia antérieur avec une dent apicale (femelle : pl 12, fig. 218 , mâle : pl. 12, fig 219, 220) , apex du tibia médian du mâle "en marteau", le bord externe inerme (pl. 12, fig. 221, 222) ..... ***Melanocratus*** Fairmaire

9. Base du pronotum avec un rebord légèrement bisinué (pl 15, fig. 291) ; épipleures élytraux plats (pl. 17, fig 323) ; sternites du mâle avec des tubercules (pl 15, fig. 288, 289) **10**

— Base du pronotum incurvée concave (pl. 19, fig. 373) , épipleures élytraux concaves (pl. 20, fig. 404) ; sternites du mâle sans tubercules ..... ***Styphacus*** Fairmaire

10. Saillie prosternale avec une cavité longitudinale (pl. 9, fig 145) ; tibia médian du mâle bisinué sur la face interne (pl 9, fig 148, 149) ; fémur antérieur robuste (ffeml/ffemw = 2,6-2,7) (pl. 8, fig 139) ; fémur postérieur du mâle fortement incurvé (pl. 9, fig. 153) ..... ***Doyenus*** Iwan

— Saillie prosternale légèrement convexe (pl 15, fig. 279) ; tibia médian du mâle subrectiligne sur la face interne (pl. 15, fig 283, 284) , fémur antérieur distinctement élargi (ffeml/ffemw = 3,2 4,9) ; fémur postérieur du mâle légèrement incurvé ..... ***Sebastianus*** Iwan

Identification key to Malagasy genera

1. Wings completely reduced; metasternum short (cavl/metl > 1.2) **2**

— Wings well developed or partly reduced (pl 4, figs 59, 69), metasternum long (cavl/metl 1.2) ..... ***Zidalus*** Mulsant et Rey

2. Eye margin near tempora evenly elevated (pl. 7, fig. 110) **3**

— Eye margin near tempora with a narrow groove (pl. 3, fig. 36) ..... ***Lechius*** Iwan

3. Antenna short or moderately long (al/apl = 0.60-0.95), mentum with shortened median keel (pl. 6, fig. 104); pronotal disc evenly elevated (pl 6, fig 105) **4**

— Antenna long (al/apl = 1.10 1 60); mentum with narrow median keel, reached anterior margin (pl 1, fig 3); pronotal disc with pair of longitudinal impressions at base (pl. 1, fig. 4) ..... ***Anchophthalmops*** Koch

4. Anterior margin of clypeus deeply emarginate medially (ed/ew " 5), simple (pl 15, fig. 290); outer margin of mandible simple **5**

— Anterior margin of clypeus slightly emarginate medially (ed/ew ca 6), with horns (pl. 14, fig. 263); outer margin of mandible with process ..... ***Pokryszkiella*** Iwan

5. Mid part of mentum wide (pl. 7, fig 124); pronotum with posterior angles not reaching the level of the middle of the base; borders of anterior and basal margins interrupted medially (pl. 9, fig. 159), scutellum narrow (pkp/st = 4 0-5.6) (pl. 9, fig 162), fore tibia slender (ftibl/ftibw > 3.5) (pl. 10, fig. 164), male mid tibia evenly widened apically (pl 10, figs 166, 167) **6**

Source : MNHN, Paris

— Mid part of mentum narrowing anteriorly (pl. 11, fig. 194); pronotum with posterior angles protruding beyond the level of the middle of the base, borders of anterior and basal margins widened medially (pl 11, fig. 195), scutellum wide (pkp/st = 1.7-3.7), except *Melanocratus fairmairei* (pkp/st ca 4.6) (pl 9, fig 144); fore tibia distinctly widened towards apex (ftibl/ftibw" 3.5, in *Melanocratus ferreri* ca 4.0) (pl. 9, fig 147); male mid tibia distinctly widened apically (pl 9, figs 148, 149)..... ..... . **7**

6. Border of prosternal anterior margin complete, border of prosternal process narrow (pl. 8, fig. 127) .... ***Clastopus*** Fairmaire

— Border of prosternal anterior margin vanishing medially, border of prosternal process wide (pl. 10, fig. 176) .... ***Hovademus*** Ardoin

7. Antenna short (al/apl = 0.60-0.80) and robust (al/was3 < 15), distal segments 7-11 transverse (pl. 16, fig. 309); elytra epipleuron widened at the level of 3-4 abdominal ventrites (pl. 17, fig. 323); hind tarsi moderately long (tars1/2 < 2.5), outer margin of mid tibia with 2 ridges or denticles (pl. 16, figs 303, 304) **8**

— Antenna moderately long (al/apl ca. 0 90) and slender (al/was3 > 15), distal segments 7-11 elongated (pl. 11, fig. 193), elytral epipleuron evenly narrowed towards apex (pl. 11, fig 197), hind tarsi long (tars1/2 ca 2 6) (pl. 11, fig. 201), outer margin of mid tibia obtuse (pl 11, figs 205, 206) . ..... ***Madobalus*** Fairmaire

8. Anterior margin of elytra (base) bordered (pl. 15, fig. 292), outer margin of female fore tibia with 2 denticles (apical and median) (pl. 15, fig 282), male fore tibia as in pl 15, fig 281; male mid tibia evenly widened, outer margin with small denticles (pl. 15, figs 283, 284) **9**

— Anterior margin of elytra (base) unbordered (pl 12, fig. 215), outer margin of female fore tibia with an apical denticle (pl. 12, fig. 218), male as in pl 12, figs 219, 220, male mid tibia "hammer-like", outer margin simple (pl. 12, figs 221, 222) . . . . ***Melanocratus*** Fairmaire

9. Pronotal base slightly doubly sinuately emarginate (pl. 15, fig. 291); elytral epipleuron flat (pl. 17, fig. 323); male abdominal ventrites with tubercles (pl. 15, figs 288, 289) **10**

— Pronotal base concave arcuate (pl. 19, fig. 373); elytral epipleuron with concavity (pl. 20, fig 404); male abdominal ventrites smooth . . .. ***Styphacus*** Fairmaire

10. Prosternal process with longitudinal concavity (pl. 9, fig. 145), male mid tibia slightly emarginate inside (pl. 9, figs 148, 149); fore femur robust (ffeml/ffemw = 2 6-2.7) (pl. 8, fig. 139); male hind femur strongly bent inside (pl 9, fig 153) .. . . ***Doyenus*** Iwan

— Prosternal process evenly convex (pl. 15, fig 279); male mid tibia straight inside (pl. 15, figs 283, 284); fore femur distinctly widened (ffeml/ffemw = 3.2-4 9); male hind femur slightly bent inside .... ***Sebastianus*** Iwan

Source : MNHN, Paris

Platynotoid group

Polyphyletic group comprising 34 genera distributed in Africa, Oriental Region and New World, and on Madagascar (Iwan, 2002a, b). Distributional areas of the genera are small and do not span zoogeographical regions.

Genus *Anchophthalmops* Koch, 1956

Anchophthalmops Koch, 1956: 173. – Iwan, 2002a. 52, 2002b: 226.

Genus type species
Anchophthalmops brevipleurum Koch, 1956; *original designation.*

Systematic position
Anchophthalmops Koch belongs to the "platynotoid" group (*Ectateus* clade). The genus is the closest related to the genera *Microselinus* Koch, *Platykochius* Iwan, *Quadrideres* Koch and *Synquadrideres* Iwan (antennomeres 7-11 transverse) *Anchophthalmops* differs from other genera of *Ectateus* clade by the following characters· antenna long (al/apl = 1 10-1 60), and male abdominal ventrites with tubercles

Measurements
Body length 8 0-18 0 mm, pl/pb = 0.59-0.67, el/eb = 1.28-1 73, el/pl = 2.27-2 67, eb/pb = 1.07-1.17.

Diagnostic characters
Head. Clypeus with moderate median emargination (ew/ed = 4.2-4.9), genal canthus wider than eyes; eye between tempus and genal canthus narrowed laterally (more than 4 ommatidia visible), circumocular depression very shallow; antenna long (al/apl = 1.1-1.6) and slender (al/was3 = 13.5-19.0), antennomere 7-11 evenly widened, transverse, 3rd antennomere long (as3/as2 = 3 0-3 7); mentum with short lateral wings, mid part short and narrowed frontwards, median keel narrow, complete; submentum short, with slightly elongated base; the last segment of maxillary palp moderately widened (mp/as3 = 1.1-1.7).

Pronotal sides arcuate, disc unevenly convex, with pair of longitudinal impressions at base; hypomeron distinctly depressed at lateral margins; pronotal punctation fine and sparse; anterior angles distinctly protruding frontwards (pl/lapa = 5.3-7 8); posterior angles short, right; base bisinuate emarginate border of the anterior margin interrupted in the middle, basal margin complete, lateral margin moderately wide to narrow (bp/lbp = 40-70), evenly wide along its whole length.

Scutellum narrow at base (pkp/st = 4.0-5.1), base depressed below the plane of the elytra.

Elytron with 9 rows (punctate-sulcate); sides rounded, in posterior part slightly convex but not tucked in; intervals with fine and sparse punctation, anterior margin (base) bisinuate and unbordered, laterad of scutellum not depressed, upper edge of elytral base convex medially (disappearing just before humeri); elytral humeri situated at the level of scutellum; epipleuron flat and evenly narrowing towards apex, outer margin straight

Prosternum evenly convex medially, anterior margin with narrow border, prosternal process protruding towards mesosternum, border narrow and entire at apex.

Wings entirely reduced.

Source : MNHN, Paris

Metasternum between insertions of mid and hind coxae moderate y short (cavl/metl – 2 2-2.6).

Metepisternum rectangular, moderately long (ml/mw = 3.1-3.8).

Legs. Hind tarsi long (tars1/2 = 2 0-2 6), fore tibia in both sexes slender (ftibl/ftibw = 4 1-5.4), outer apical denticle right, outer margin of anterior and mid tibia simple, inner spur of hind tibia moderately long (dtk/dod = 1.4 1 6); anterior femora moderately wide (ffeml/ffemw = 3.8-4.4).

Abdomen, sternite visible 5 with border (completed or interrupted medially), sternite visible 1 with wide apophysis (pav/pm = 1.6-2.1).

Genitalia

Female. lfb/lo = 4 5-6.0, paraproct longer than coxites (p/c = 1.1-1 6), coxites longitudinal (tc/2bc1 = 1.1 1 2), first plate narrow (bc1/lc1 = 1.5-1.7) and long (lc1/lc2 – 1.0-1 5), distance between bases of plates three and four long (c3/c3-c4 = 1.9-3.6), fourth plate longitudinal, its apical free part long (c4-c3/c1 = 0.3-0.4); bursa copulatrix with no sclerite, spermatheca with narrow ducts branched from the base, spermathecal accessory gland present. Male: lmb/la = 5 0 7 7, lbp/lap = 3 8-5.0, apical part of aedeagus tapered, lacinia not protruding beyond lateral margins of apical part of aedeagus, connection apical part of tegmen/lacinia oblique

Sexual dimorphism

Male. anterior tarsi widened, inner side of tibiae and femora with structures specific for each species; abdominal ventrites with single tubercles on anterior margins.

Female: anterior tarsi and tibiae simple; abdominal ventrites smooth

Species composition

The generic revision of the subtribe Platynotina (Iwan, 2002a) presents a new interpretation of the genus, which comprises seven species occurring in the eastern part of Africa.

Only one species, *A. menouxi* (Mulsant et Rey, 1853), was recorded from Madagascar

Distribution

Madagascar (?), Kenya, Mozambique, Somalia, Tanzania, Zanzibar and Zimbabwe

Anchophthalmops menouxi (Mulsant et Rey, 1853)

(Pl. 1, 2, figs 1-25; pl. 32, fig. 535, map 4)

Selinus Menouxii Mulsant et Rey, 1853 322 – Gemminger and Harold, 1870: 1915, Gebien, 1910 278, 1938: 298; Koch, 1956. 260; Iwan, 1995a. 52.

Anchophthalmops menouxi: Iwan, 2002a: 53, 2002b: 227

Opatrinus Sayi Horn, 1870: 349 Crotch, 1873: 106; Henshaw, 1885: 119; Gebien, 1910: 277, 1938: 415; Papp, 1961: 119; syn. by Iwan, 1995a: 52

Opatrinus trivialis Gerstaecker, 1871: 60. – Gerstaecker, 1873: 177; syn by Koch, 1956: 260.

Selinus trivialis: Fairmaire, 1887: 284; Gebien, 1910: 278, 1938: 298.

Types

Selinus menouxi Mulsant et Rey, 1853.

– Lectotype: male, "Afrique, coll. Chevrolat" (MNHN).

– Paralectotypes: 2 ♂♂, "*Selinus Menouxi*, Madag., Muls " (present designation) (MNHN).

Source : MNHN, Paris

Opatrinus trivialis Gerstaecker, 1871.
– Syntypes: "Mombas, Insel Sansibar" (ZMHB).

Opatrinus sayi Horn, 1870.
– Holotype: male, "KS, 3974 Holotype, O. Sayi Horn" (MCZC)

Measurements
Body length 10 3-13 7 mm, pl/pb = 0.61-0.67, el/eb = 1.34-1.49, el/pl = 2 40-2 67, eb/pb = 1.10-1.17; clypeus – ew/ed ca 4 2; antenna – al/apl ca. 1.1, al/was3 ca. 13.5, as3/as2 ca. 3 0; maxillary palp – mp/as3 ca 1 1; scutellum – pkp/st = 4.0-5 0; metasternum – cavl/metl ca. 2.2, metepisternum – ml/mw ca 3.8; legs - tars1/2 ca. 2.0, ftibl/ftibw ca 4 4, dtk/dod ca. 1.5, ffeml/ffemw ca. 3.8; abdomen – pav/pm ca. 1.6

Diagnostic characters
Head as in fig. 1, between tempus and genal canthus 4-5 ommatidia visible; antennomere 7-11 evenly widened, transverse (fig. 2); mentum and submentum as in fig 3.

Pronotum (fig 4) with sides slightly widened towards base or subparallel, anterior angles moderately protruding frontwards (pl/lapa ca. 7 8), posterior angles right, and protruding beyond the middle of base; lateral border moderately wide (bp/lbp ca. 55).

Elytron composed of 9 rows (striae punctate-sulcate) connected as follows: 1-2, 3-4, 5-6, 7 8, 9 free, sometimes varied e g. 1-2, 3-6, 4 5, 7-8, 9-free, intervals slightly convex, 7th more than others; elytral humeri rounded, and not protruding outwards (fig. 5); epipleuron flat, inner margin partly bordered at apex (fig. 6).

Prosternum as in fig. 7.

Male legs. Fore tarsi with pubescence on underside, glossy median groove present on hind tarsi (figs 8-13); anterior tibiae slightly widened, with concavity inside (figs 14-15); mid tibiae with apical denticle and carina on ventral side (figs 16-17); posterior tibiae slightly bent, with sparse, long setae (fig. 18); mid femora with obtuse denticle on inner side (figs 19-20).

Male abdominal ventrites 1-2 with small tubercles on anterior margins (fig 21)

Genitalia
Female (figs 22 23): lfb/lo ca. 4.5, p/c ca. 1.4-1.5, tc/2bc1 ca 1.1, bc1/lc1 = 1.6-1.7, lc1/lc2, 1.3, c3/c3-c4 ca. 1.9, c4-c3/c1 ca. 0.3.

Male (figs 24-25): lmb/la ca. 7.6, lbp/lap ca. 4.2

Sexual dimorphism
Male body more slender – el/eb = 1.42-1.49; pronotal sides subparallel on 2/3 at base.

Female: body more robust – el/eb = 1 34-1.44; pronotum trapezial, widened towards base.

Structure of legs (figs 8-20) – sexual secondary characters (as in other species of *Anchophthalmops*).

Distribution (map 4)
Kenya, Madagascar (?), Tanzania (including Zanzibar).

In 1938, Gebien noted in his catalogue that "Madagascar" is the type locality for *Selinus menouxi*, while the original description by MULSANT and REY (1853) included "L'Afrique?" The other type specimens (material examined by D. Iwan) were labelled with "Madagascar" as the place of their collection.

Source : MNHN, Paris

The detailed studies of *A. menouxi* showed that the eastern part of Africa is the main distributional area of the species (Koch, 1956; Iwan, 2002a), but the close proximity of the distribution area of the species (and genus) in Africa makes finding introduced specimens in Madagascar likely

In 1995, based on examination of type specimens, I synonymised *Opatrinus sayi* (junior synonym of *A. menouxi*), described in 1870 by Horn on the basis of a specimen from the USA. The holotype is teneral (light brown in colour), which indicates a probable introduction to the US of a larva from Africa

There are also cases of misidentification (as *Selinus menouxi* Mulsant et Rey) of specimens of *Opatrinus insularis* Mulsant et Rey, for example a series of specimens deposited at the MNHN ("Nosi Be, Brancs", "Fauna Ins Nossi bé", "Muséum Paris 1906, coll L. Fairmaire").

Genus *Lechius* Iwan, 1995

Lechius Iwan, 1995c: 404. Iwan, 2001c: 501, 2002a: 73, 2002b: 274

Genus type species
Selinus abacoides Fairmaire, 1902; *original designation.*

Systematic position
The genus *Lechius* is a member of the platynotoid group. With its sister clade *Pseudoselinus*, the genus forms a group characterised by the posteriorly convex elytra (9th intervals visible from underside) and the inner margin of the apical part of the epipleuron partly bordered The short antenna (al/apl ca. 0.80) and the presence of the groove near tempus distinguish *Lechius* from all other genera of the platynotoid group.

Measurements
Body length 10 0-15 5 mm, pl/pb = 0 60 0 75, el/eb = 1.30-1.45, el/pl = 2.00-2.64, eb/pb = 1.10-1.17.

Diagnostic characters
Head. Clypeus with moderately deep and wide median emargination (ed/ew = 4.5-7.2), genal canthus as wide as eye, ventral margin near tempus with a groove, eye with distinct circumocular depression, eye narrowed laterally (between tempus and genal canthus 1-2 ommatidia visible), antenna short (al/apl = 0 85 1.00) and slender (al/was3 ca. 18.0), antennomeres 8-11 evenly widened, 3rd antennomere short or moderately long (as3/as2 = 2.4 2.6); mentum with short, well visible lateral wings, mid part short and narrowing anteriorly, median keel narrow and complete, submentum triangular with slightly elongated base; last segment of maxillary palp moderately wide (mp/as3 = 1.2-1.3)

Pronotum. Sides rounded or subparallel, base doubly sinuately emarginate; anterior angles distinctly protruding frontwards (pl/lapa = 7.2-8 3), posterior ones right, protruding beyond the middle of base; border of anterior margin interrupted in middle, basal border entire, lateral border narrow to moderately wide (bp/lbp = 40 58), of even width along its whole length; pronotal hypomeron evenly convex.

Scutellum narrow at base (pkp/st = 3 6-4.6), with base depressed below the plane of elytra

Elytra Each elytron of 9 striae (rows) punctate-sulcate, connected as follows: 1-9, 2-7, 3-6, 4-5, 8-free; sides slightly rounded, tucked in posteriorly (part of 9th intervals visible underside),

Source : MNHN, Paris

intervals with very fine and sparse punctation; anterior margin (base) bisinuate and unbordered, upper edge of elytral base convex from scutellum, disappearing just before humeri; elytral humeri rounded and not protruding outwards, situated at the level of scutellum; epipleuron flat, evenly narrowing towards apex, outer margin straight, apical part of epipleuron flat or distinctly convex

Prosternum in middle evenly convex, anterior margin with narrow border, prosternal process protruding towards mesosternum, with narrow border at apex.

Wings entirely reduced

Metasternum between insertions of mid and hind coxae moderately narrow (cavl/metl = 1.9 2 4).

Metepisternum rectangular, long (ml/mw = 2.4-3.1)

Legs. Male fore tarsi widened, hind tarsi moderately long in both sexes (tars1/2 = 2.1-2 4); fore tibia slender (ftibl/ftibw = 4 0-4.3), outer apical denticle straight, outer margin of fore, mid and hind tibiae in both sexes simple, inner spur of hind tibia moderately long (dtk/dod = 1 6-1.7); fore femur moderately widened (ffeml/ffemw = 3.5-4.2).

Abdomen. Bordering of the last abdominal ventrite entire, process of I abdominal ventrite wide (pav/pm = 1.7-2.1).

Genitalia

Female: lfb/lo = 5.2, paraproct longer than coxites (p/c = 1.2-1.6), coxites longitudinal (tc/2bc1 = 1 03 1.40), first plate narrow (bc1/lc1 = 1 5-1.7) and moderately long (lc1/lc2 = 1.0-1.1), distance between bases of plates three and four long (c3/c3-c4 = 2.1-2.5), fourth plate longitudinal, its apical free part moderately long (c4 c3/c1 = 0.3), bursa copulatrix with no sclerite, spermathecal accessory gland present

Male. lmb/la = 6.6-6 7, lbp/lap = 3.1-3.3, apical part of aedeagus tapered, lacinia not protruding beyond lateral margins of apical part of aedeagus, connection apical part of tegmen/lacinia oblique.

Sexual dimorphism

Male: body more slender than female

Male: anterior tarsi widened, inner side of tibiae and femora with structures specific for each species.

Female: anterior tarsi and tibiae simple.

Species composition (map 5)

Lechius composed of the following species (Iwan, 2001c): *abacoides, madagascariensis* and *steineri.*

Distribution

Malagasy endemic.

Clé d'identification des espèces

1. Mentum (pl 3, fig. 37) , les 2/3 basaux des côtés du pronotum subparallèles, le rebord latéral assez large (bp/lbp ca. 40) (pl 3, fig 38) , saillie prosternale aigüe (pl. 3, fig. 41) , tibia médian du mâle inerme , fémur médian du mâle avec une dent (pl. 3, fig. 44) ..... ***madagascariensis*** (Iwan)

Source : MNHN, Paris

— Mentum (pl 2, fig 27 , pl. 3, fig 49) , côtés du pronotum arrond's, le rebord latéral étroit (bp/lbp = 52-58) (pl. 2, fig. 28 ; pl. 3, fig. 50) ; saillie prosternale obtuse (pl. 2, fig. 30) , tibia médian du mâle avec une dent apicale , fémur médian du mâle inerme 2

2. Mentum plus large en avant (pl 2, fig. 27) ; bordure latérale du pronotum effacée, le rebord interne évanescent au milieu (pl 2, fig. 28) , apex de l'élytre obtus (pl. 2, fig. 29) , tibia postérieur du mâle incurvé , spermathèque simple (pl. 2, fig. 33) , édéage (pl. 2, fig. 34, 35) .... ***abacoides*** (Fairmaire)

— Mentum plus étroit en avant (pl. 3, fig. 49) ; bordure latérale du pronotum nettement distincte, disque du pronotum avec un sillon étroit vers la marge interne (pl. 3, fig. 50) ; apex de l'élytre fortement convexe (pl 3, fig 52) ; tibia postérieur du mâle droit ; spermathèque ramifiée (pl. 4, fig. 53) ; édéage (pl. 4, fig. 54, 55) .. . . . . ***steineri*** Iwan

Identification key for the species

1. Mentum as in pl. 3, fig. 37; pronotal sides subparallel 2/3 at base, lateral border moderately wide (bp/lbp ca 40) (pl 3, fig 38), prosternal process elongated apically (pl. 3, fig. 41); male mid tibia simple, male mid femur with denticle (pl. 3, fig. 44) .... ***madagascariensis*** (Iwan)

— Mentum as in pl. 2, fig. 27, pl. 3, fig. 49; pronotal sides slightly rounded, lateral border narrow (bp/lbp = 52-58) (pl. 2, fig. 28 ; pl. 3, fig. 50); prosternal process obtuse (pl. 2, fig. 30); male mid tibia with apical denticle; male mid femur simple 2

2. Mid part of mentum widened frontwards (pl. 2, fig. 27); lateral pronotal border delicate, inner edge vanishing (pl. 2, fig. 28); outer margin of elytron obtuse on apex (pl 2, fig. 29); male hind tibia bent, spermatheca simple (pl. 2, fig. 33); aedeagus as in pl. 2, figs 34, 35 ... . ***abacoides*** (Fairmaire)

— Mid part of mentum narrowed frontwards (pl. 3, fig. 49); lateral pronotal border distinct, pronotal disc with narrow groove near inner margin (pl 3, fig. 50); outer margin of elytron strongly convex on apex (pl 3, fig. 52); male hind tibia straight; spermatheca branched (pl. 4, fig. 53); aedeagus as in pl. 4, figs 54, 55 . . . ***steineri*** Iwan

Lechius abacoides (Fairmaire, 1902)

(Pl. 2, figs 26-35 ; pl. 32, fig. 536, map 5)

Selinus abacoides Fairmaire, 1902. 328, – Gebien, 1910: 277, 1938. 298.

Lechius abacoides: Iwan, 1995c: 406; 2001c: 504, 2002a: 74, 2002b: 274.

Lectotype

Designated by IWAN (1995c), male, "Madagascar, Sud, Andrahomana, Alluaud 1900 (38)/Type, *Selinus abacoides*/Muséum Paris, 1906, coll Léon Fairmaire" (MNHN).

Paralectotypes

"Madagascar Sud, Andrahomana, Alluaud 1900/Muséum Paris 1906 Coll. Léon Fairmaire", 6 ♂♂, 4 ♀♀ (MNHN); "Muséum Paris, Madagascar, Région de l'Androy,

Source : MNHN, Paris

Ambovombe, Dr J. Decorse 1901/Type/*Selinus abacoides* Fairm. Ann. Fr 1902" 3 ♀♀ (MNHN); "Muséum Paris, Madagascar, Androy, Bas Mandrare, de Behara à l'Otrokotroky, Dr J Decorse, 1901/23 mai 1900" 2 ♂♂, 1 ♀ (MNHN), "Madagascar Sud, Pays Androy, Nord, Alluaud 1900, (36), Muséum Paris, coll. Ch. Alluaud" 1 ♀ (MNHN).

Measurements

Body length 10.0-14 5 mm, pl/pb = 0 65-0 69, el/eb = 1 40-1.45, el/pl = 2 34-2.47, eb/pb = 1.12-1 14; clypeus – ew/ed ca. 7.2, antenna – al/apl ca. 0.85, al/was3 ca. 18 0, as3/as2 ca. 2 6; maxillary palp – mp/as3 ca 1.2, scutellum – pkp/st ca. 3.7, metasternum – cavl/metl ca. 2.3, metepisternum – ml/mw ca 3.1; legs – tars1/2 ca 2 2, ftibl/ftibw ca. 4.2, dtk/dod ca 1 6, ffeml/ffemw ca. 4 2; abdomen – pav/pm ca. 1.8.

Diagnostic characters

Head Circumocular depression distinct, with short row ventrally (fig 26); mentum as in fig. 27, mid part widened frontwards

Pronotum (fig. 28). Sides slightly rounded; anterior angles distinctly protruding frontwards (pl/lapa ca. 8.0); lateral border narrow (bp/lbp ca 52), inner edge vanishing.

Elytron. Intervals slightly convex, with very fine and sparse punctation, outer margin of elytron obtuse; inner margin of elytral epipleuron partly bordered on apex (fig 29).

Prosternal process rounded, obtuse (fig. 30).

Metepisternum as in fig. 31.

Male legs Anterior tibiae moderately widened, mid tibiae with apical denticle, hind ones slightly bent inside; male mid femora simple.

Genitalia

Female (figs 32-33): lfb/lo ca. 5 2, p/c = 1.4-1 6, tc/2bc1 = 1.03-1.10, bc1/lc1 ca. 1 7, lc1/lc2 ca. 1.1, c3/c3-c4 = 2.1-2 5, c4-c3/c1 ca. 0.2; spermatheca simple, not branched, ducts widened

Male (figs 34-35): lmb/la ca. 6.7, lbp/lap ca. 3.3

Sexual dimorphism

Male body more slender than female (male· el/eb = 1 44-1.45, female: el/eb = 1 40-1 42).

Male anterior tarsi and tibiae widened, inner side of mid tibiae with denticle, hind tibiae bent inside.

Female· anterior tarsi and tibiae simple.

Distribution (map 5)

MADAGASCAR EST: Andrahomana, 1900 (*CH ALLUAUD*) – Antsihanaka. – Ikongo, 1902 (*G GRANDIDIER*). – Fort-Dauphin, 1960 (*J. E RANDRIAMASY*). – Midongy. – Vondrozo, 1921

MADAGASCAR OUEST: lac Ihotry, 1965 (*L. BIGOT*). – Forêt de Lambomakandro, 1957 (*P. A. ROBINSON*). – Forêt du Zombitsy.

MADAGASCAR SUD Amboasary, 1987 (*P & H. SCHULE*). – Ambovombe, Région de l'Androy, 1901 (*J. DECORSE*). – Androy, Bas Mandrare, de Behara à l'Otrokotrokyn 1901 (*J DECORSE*) – Ankororoka, Tuléar [Toliara] Distr. – 15 km SE of Tuléar [= Toliara] at Onilahy Riv., 1935. – Ankazomateila, Route Betioky-Beheloka, 1995. – Antanimora-Amboasary, 1960 (*J. E. RANDRIAMASY*) – Ampanihy. – Beloha. – Efoetsy, Betioky Distr, 1956. –

Source · MNHN, Paris

Imanombo, Androy, 1901 (*Capitaine* VACHER). – Mahafaly, 11/12 km à l'ouest d'Ankalirano, 1974 (*P.* VIETTE/*A.* PEYRIERAS) Tranomaro, Androatsabo, 1971-1972 (*A.* PEYRIERAS). – Vohitsara, Betioky, 1948.

Biology

Period of adult appearance: I, III, IV, V, VII, XII

Habitat : "savane sous pierres et troncs morts", altitude: 250 m, 400 m, 500 m

Lechius madagascariensis (Iwan, 1998)

(Pl. 3, figs 36-47, map 5)

Hovademulus madagascariensis Iwan, 1998e. 331.

Lechius madagascariensis. Iwan, 2001c. 504, 2002a. 74, 2002b: 274.

Holotype

Male, "Ampijoroa, 14 Jan 1956, Tsaramandroso/E. Mc. Callan Collector/Institut scientifique, Madagascar" (TMHN).

Measurements

Body length 10.5 mm, pl/pb ca. 0.75, el/eb ca. 1.30, el/pl ca. 2.00, eb/pb ca. 1.10; clypeus – ew/ed ca. 4.5, antenna – al/apl ca. 1.0, al/was3 ca. 18.0, as3/as2 ca. 2 4; scutellum – pkp/st ca. 4.6; metasternum – cavl/metl ca. 2.4, metepisternum – ml/mw ca. 2.4; legs – tars1/2 ca. 2.1, ftibl/ftibw ca. 4.3, dtk/dod ca. 1.7, ffeml/ffemw ca. 3.6, abdomen – pav/pm ca. 2.1.

Diagnostic characters (male)

Head. Circumocular depression distinct, with short row ventrally (fig 36), mentum as in fig. 37, mid part narrowed frontwards.

Pronotum with sides subparallel 2/3 at base (fig. 38), anterior angles distinctly protruding frontwards (pl/lapa ca. 7 2), lateral border distinct, and moderately wide (bp/lbp ca. 40).

Elytron Intervals slightly convex, with distinct punctation (fig. 40), outer margin of elytron convex; inner margin of elytral epipleuron partly bordered on apex.

Prosternal process protruding towards mesosternum and convex on apex (fig. 41)

Male legs. Anterior tibiae moderately widened (figs 42-43), mid and hind tibiae simple, male mid femora with denticle on inner side (fig. 44).

The last abdominal ventrite as in fig. 45.

Genitalia

Male *genitalia* as in figs 46-47; lmb/la ca. 6.6, lbp/lap ca. 3.1

Female unknown.

Distribution (map 5)

MADAGASCAR OUEST: – Ampijoroa, Tsaramandroso, 1956 (*E. Mc C.* CALLAN).

Biology

Period of adult appearance. I.

Source : MNHN, Paris

Lechius steineri Iwan, 1995

(Pl. 3, 4, figs 48-55; pl 32, fig. 537, map 5)

Lechius steineri Iwan, 1995c. 408. – Iwan, 2001c: 504, 2002a 74, 2002b: 274.

Holotype

Male, "Madagascar: Province Toliara 4 km N Bemanonga 29 March. 1990/Under leaf litter on loose sandy soil in partial shade of trees and shrubs/W E Steiner, C Kremen, V. Razafimahatratra collectors" (MNHN).

Paratypes

"Madagascar: Province Toliara 4 km N Bemanonga 29 March. 1990/Under leaf litter on loose sandy soil in partial shade of trees and shrubs/W. E. Steiner, C. Kremen, V Razafimahatratra collectors" 4 ♀♀, 1 ♂ (MNHN), 2 ♀♀ (MIIZ); "Madagascar Sud-Ouest, lac Ihotry, 40 m, Morombe, VII-57, Andria R." 2 ♂♂, 2 ♀♀ (MNHN), 1 ♂, 1 ♀, (MIIZ); "Mahabo, Paris Muséum, Madagascar, G Grandidier, 1899", 1 ♂, 1 ♀ (MNHN), "Muséum Paris, Madagascar, Pays Mahafaly, Bastard 1900", 1 ♀ (MNHN); "Muséum Paris, Madagascar, Entre Ikongo et Fort-Dauphin, G. Grandidier 1902", 1 ♂ (MNHN); "Muséum Paris, Madagascar, Prov. de Tuléar, bas Fiherena, F. Geay 1906", 1 ♂ (MNHN), "Muséum Paris, Madagascar (S-O) Plaines de Fiherena, F. Geay, 1905", 4 ♀♀ (MNHN), "juillet, Madagascar, collection le Moult; Muséum Paris, coll. J. Chatanay, 1914", 2 ♂♂, 2 ♀♀ (MNHN), 1 ♂ (MIIZ).

Measurements

Body length 10 5 15.5 mm, pl/pb = 0.60-0.70, el/eb = 1.31-1 45, el/pl = 2.21-2.64, eb/pb = 1.10-1.17; clypeus – ew/ed ca. 5.25; antenna – al/apl ca. 0.85, al/was3 ca. 18.0, as3/as2 ca. 3 3, maxillary palp – mp/as3 ca 1.3; scutellum – pkp/st ca. 3.6; metasternum – cavl/metl ca. 1 9, metepisternum – ml/mw ca 2.6; legs – tars1/2 ca. 2.1, ftibl/ftibw ca. 4 0, dtk/dod ca. 1.7, ffeml/ffemw ca. 3.5, abdomen – pav/pm ca 1 7

Diagnostic characters

Head (fig. 48). Circumocular depression distinct, with long row ventrally; mentum as in fig. 49, mid part narrowed frontwards

Pronotum with sides slightly rounded (fig. 50); anterior angles distinctly protruding frontwards (pl/lapa ca. 8 3); lateral border distinct, and narrow (bp/lbp ca. 58), as in fig. 51.

Elytron. Intervals slightly convex, with distinct punctation; outer margin of elytron convex, inner margin of elytral epipleuron entire bordered on apex (fig. 52).

Prosternal process protruding towards mesosternum and convex on apex (fig 41).

Male legs. Anterior tibiae slightly widened apically; mid tibiae with apical denticle; hind tibiae straight; male mid femora simple.

Genitalia

Female (fig. 53): lfb/lo ca. 5.2, p/c = 1.2-1.4, tc/2bc1 = 1.1-1.4, bc1/lc1 = 1.5-1.6, lc1/lc2 ca 1.0, c3/c3-c4 = 2 3-2 5, c4-c3/c1 ca 0 3, spermatheca branched, ducts slightly widened

Male (fig. 54-55): lmb/la ca. 6 7, lbp/lap ca. 3.2

Sexual dimorphism

Male body more slender than female (male. el/eb = 1.43-1 45, female: el/eb = 1.31-1.43).

Male: anterior tarsi and tibiae widened, inner side of mid tibiae with denticle, hind tibiae straight

Female: anterior tarsi and tibiae simple.

Source : MNHN, Paris

Distribution (map 5)

MADAGASCAR OUEST: Morondava, 4 km N Bemanonga, 1990 (*W E STEINER, C KREMEN, V. RAZAFIMAHATRATRA*). – Lac Ihotry, Morombe, 1957 (*P. A ROBINSON*). – Ihotry, 1965. – Mahabo, 1899 (*G. GRANDIDIER*).

MADAGASCAR SUD. – Pays Mahafaly (*BASTARD* 1900). – Prov de Tuléar [= Toliara], bas Fiherenana, 1906 (*F. GEAY*). – Plaines du Fiherenana, 1905 (*F. GEAY*).

Biology

Period of adult appearance: III, VII.

Habitat "under leaf litter on loose sandy soil in partial shade of trees and shrubs", "bush"; altitude. 40 m.

Genus *Zidalus* Mulsant et Rey, 1853

Zidalus Mulsant et Rey, 1853· 296 Gemminger and Harold, 1870· 1914, Gebien, 1910 276, 1938. 296; Koch, 1956 93; Iwan, 1995a: 11, 1995b· 362; 2002a 106, 2002b. 309; Iwan and Bečvář, 2001: 73.

Zodinus Mulsant et Rey, 1853. 315. – Gemminger and Harold, 1870: 1914; Gebien, 1910: 276, 1938· 296; Koch, 1956: 93; syn by Iwan, 1995a: 11, 1995b· 362, type species *Opatrinus servus* Mulsant et Rey, 1853; designated by Koch (1956)

Apterozidalus Ardoin, 1965· 1315, syn by Iwan, 1995b: 362; type species. *Apterozidalus royi* Ardoin, 1965; designated by monotypy.

Genus type species

Opatrinus corvinus Mulsant et Rey, 1853, designated by monotypy

Systematic position

Zidalus belongs to platynotoid group With *Alaetrinus*, the genus forms a separate clade characterised by the genal canthus narrower than eyes, long antenna, and the structure of ovipositor (paraproct shorter than coxites, first plate of coxite short)

Zidalus differs from *Alaetrinus* in the structure of pronotum (basal border entire), elytron (striae punctate-sulcate), and the shape of the first plate of coxite (distinctly transverse).

Measurements

Body length 8 2-17.0 mm, pl/pb = 0.58-0.75, el/eb = 1.29-1 79, el/pl = 2.30-3 25, eb/pb = 1.12-1.40.

Diagnostic characters

Head Clypeus with shallow median emargination (ed/ew = 8 0-11.5), genal canthus equal to eyes or slightly narrower; eye laterally narrowed, between tempus and genal canthus 2 5 ommatidia visible, antenna long (al/apl – 1.3-1.5) and slender (al/was3 = 13.0-17.0), 3rd antennomere short (as3/as2 = 2.0-2.8); 7 11 distal antennomeres evenly widened, transverse; mentum with short, well visible lateral wings, mid part short and narrowing frontwards, median keel narrow and complete; submentum triangular with slightly elongated base; last segment of maxillary palp moderately wide (mp/as3 = 1 0-1 3).

Pronotum Sides rounded or subparallel, base doubly sinuately emarginate; anterior angles moderately protruding anteriorly (pl/lapa = 8.4-14.0), posterior ones right or sharp, not protruding or protruding beyond the middle of base; border of anterior margin interrupted

Source : MNHN, Paris

in middle, basal border entire, lateral border narrow to extremely narrow (bp/lbp = 50-80), of even width along its whole length anterior to posterior angles; pronotal hypomeron evenly convex.

Scutellum moderately wide (pkp/st = 3.2-4 1), with base depressed below the plane of elytra.

Elytra. Each elytron composed of 9 striae (rows) punctate-sulcate, connected as follows: 1-free, 2-9, 3-6, 4 5, 7-8 or 1-9, 2-7, 3-6, 4-5, 8-free; sides subparallel, not tucked in posteriorly, anterior margin (base) bisinuate and unbordered, upper edge of elytral base convex from scutellum, disappearing just before humeri, base of elytra lateral of scutellum not depressed; elytral humeri rounded and not protruding outwards, situated at the level of scutellum; epipleuron flat, evenly narrowing towards apex, outer margin straight, apical part of epipleuron narrow and flat, inner margin bordered entirely

Prosternum evenly convex, anterior margin with narrow border, prosternal process protruding towards mesosternum with narrow border entire or disappearing at apex.

Wings well developed or partly reduced

Metasternum between insertions of mid and hind coxae long (cavl/metl = 0.6 1.2).

Metepisternum rectangular, very long (ml/mw = 3.6-5.1)

Legs. Male fore tarsi widened, hind tarsi moderately long in both sexes (tars1/2 = 1.9-2.5); fore tibia slender (ftibl/ftibw = 4.9-6.0), outer apical denticle straight; outer margin of fore, mid and hind tibiae in both sexes simple, inner spur of hind tibia moderately long (dtk/dod = 1.5-2.0); fore femur moderately widened (ffeml/ffemw = 3.1-3.8).

Abdomen Bordering of the last abdominal ventrite absent or entire, process of I abdominal ventrite wide (pav/pm = 1.8-2.1).

Genitalia

Female: lfb/lo = 5.8-7.5, paraproct longer than coxites (p/c = 0.8-0.9); coxites longitudinal (tc/2bc1 = 1.0-1.1), first plate wide (bc1/lc1 = 3 0-3 6) and short (lc1/lc2 = 0 4-0.6), distance between bases of plates three and four long (c3/c3-c4 = 1.9-2.6), fourth plate longitudinal, its apical free part short (c4-c3/c1 = 0.1); bursa copulatrix with no sclerite or with 2 longitudinal plates, spermatheca with thin, branched ducts; spermathecal accessory gland present

Male: lmb/la = 5.6-7.4, lbp/lap = 2.3-5.0.

Sexual dimorphism

Male body more slender than female body.

Male anterior tarsi widened, inner side of tibiae and femora with structures specific for each species.

Female: anterior tarsi and tibiae simple.

Species composition

14 African species belong to the genus, three of them (*attenuatus, insularis* et *servus*) occurring on Madagascar too.

Comments

In his 1947 paper, Gridelli suggested the existence of pairs of subspecies in species of the genus *Opatrinus* (at present *Zidalus*) (*O. setuliger setuliger* and *O setuliger camerunensis*, *O. attenuatus attenuatus* and *O attenuatus bottegoi*; *O. latipes latipes* and *O latipes*

Source : MNHN, Paris

tanaensis, *O. insularis insularis* and *O. insularis somalicus*; *O. niloticus niloticus* and *O. niloticus zolotarevskyi*), one of the pair representing the population from the western part of Africa, the other – from the eastern part and from Madagascar, or else one subspecies inhabiting the African continent, and the other – Madagascar. Following a detailed study of numerous populations, I synonymised these subspecies (IWAN, 2002a) on the ground of the absence of any clear discontinuity in the characters that had been adopted as the basis for GRIDELLI's (1947) division.

Distribution

Tropical Africa

Clé d'identification des espèces

1. Corps robuste (el/pl = 2,25-2,60) ; yeux faiblement saillants (3 ommatidies entre la joue et la tempe) (pl. 4, fig. 66) ; base du disque du pronotum avec deux concavités longitudinales (pl. 4, fig. 67) , ponctuation des stries élytrales plus forte (strie IV avec 30 points au maximum) (pl. 4, fig. 68) , ailes partiellement atrophiées (pl. 4, fig. 69), métasternum et métépisterne courts (cavl/metl ca. 1.2, ml/mw ca. 3.6) ..... ***insularis*** (Mulsant et Rey)

— Corps plus étroit (el/pl = 2,90-3,25) , yeux fortement saillants (5 ommatidies entre la joue et la tempe) (pl. 4, fig. 56, 70) ; disque du pronotum régulièrement convexe (pl. 5, fig. 73) ; ponctuation des stries élytrales plus fine (strie IV avec 43 à 66 points) , ailes entièrement développées (pl. 4, fig. 59), métasternum et métépisterne longs (cavl/metl = 0,6-0,8, ml/mw = 4,6-5,1) **2**

2. Prosternum (pl. 4, fig. 57) et saillie prosternale (pl. 4, fig. 58) modérément ponctués ; bord interne du fémur médian du mâle denté (pl. 4, fig. 63). ..... ***attenuatus*** (Klug)

— Prosternum (pl. 5, fig. 74) et saillie prosternale (pl. 5, fig. 75) fortement ponctués ; fémur médian du mâle inerme ..... ***servus*** (Mulsant et Rey)

Identification key for the species

1. Body robust (el/pl = 2.25-2.60); eyes moderately protruding outwards (3 ommatidia between genae and tempora) (pl. 4, fig. 66), pronotal disc with two longitudinal concavities at base (pl. 4, fig. 67); punctation in elytral rows coarse (up to 30 punctures in row IV) (pl. 4, fig. 68); wings partly reduced (pl. 4, fig. 69), metasternum and metepisternum short (cavl/metl ca. 1.2, ml/mw ca. 3.6) .... ***insularis*** (Mulsant et Rey)

— Body slender (el/pl = 2.90-3.25); eyes strongly protruding outwards (5 ommatidia between genae and tempora) (pl. 4, figs 56, 70), pronotal disc evenly convex (pl. 5, fig. 73), punctation in elytral rows fine (43-66 punctures in row IV); wings full developed (pl. 4, fig. 59), metasternum and metepisternum long (cavl/metl = 0.6-0.8, ml/mw = 4.6-5.1) **2**

2. Prosternum (pl. 4, fig. 57) and pronotal hypomeron (pl. 4, fig. 58) moderately punctured; male mid femur with spine on inner side (pl. 4, fig. 63) ... ***attenuatus*** (Klug)

— Prosternum (pl. 5, fig. 74) and pronotal hypomeron strongly punctured (pl. 5, fig. 75); male mid femur simple ..... ***servus*** (Mulsant et Rey)

Source : MNHN, Paris

Zidalus attenuatus (Klug, 1833)

(Pl. 4, figs 56-65; pl. 32, fig. 538, maps 6, 7)

Opatrum attenuatum Klug, 1833: 88.

Opatrinus attenuatus: Gebien, 1922: 273, 1938· 296, Gridelli, 1947. 44; Koch, 1956. 114.

Opatrinus madagascariensis Mulsant et Rey, 1853: 319. – Gemminger and Harold, 1870: 1915, Fairmaire, 1887: 283, Muller, 1887: 302; Gebien, 1910: 277; Chatanay, 1913 766; syn. by Gebien, 1922: 273.

Eurynotus inops Fåhraeus, 1870: 289. – Gebien, 1910: 276, 1938· 295; Koch, 1953: 272

Opatrinus attenuatus bottegoi Gridelli, 1947. 45 – Koch, 1956. 115; Iwan, 1995b: 392, syn. by Iwan, 2002b: 310.

Zidalus attenuatus· Iwan, 1995b: 392, 2002a: 107, 2002b 309; Ferrer, 1998. 358; Iwan and Bečvář, 2001: 79.

Types

Opatrum attenuatum Klug, 1833.

– Lectotype. designated by IWAN (1995a), male, "*Opatr attenuatum* Klug, Madagascar, Goudot, 45773" (ZMHB).

– Paralectotypes: ♂, ♀ (ZMHB).

Opatrinus madagascariensis Mulsant et Rey, 1853.

– Syntypes: "Madagascar, coll. Deyrolle" (MNHN)

Eurynotus inops Fåhraeus, 1870.

– Holotype: female, "Caffraria" (NHRS).

Opatrinus attenuatus bottegoi Gridelli, 1947.

– Holotype: female, "Zanzibar, Raffray" (MCSG).

Measurements

Body length 8.2-11,9 mm, pl/pb = 0 60-0.67, el/eb = 1 46-1.55, el/pl = 2 90-3.00, eb/pb = 1.24-1.30; clypeus – ew/ed ca 9.25; antenna – al/apl ca. 1.4, al/was3 ca 15 0, as3/as2 ca. 2.0, maxillary palp – mp/as3 ca. 1.2; scutellum – pkp/st ca. 4.1, legs – tars1/2 ca 1.9, ftibl/ftibw ca. 5.8, dtk/dod ca. 1 8, ffeml/ffemw ca. 3 5; abdomen – pav/pm ca. 2.1.

Diagnostic characters

Body slender - el/pl = 2.90-3 00.

Head (fig. 56). Genal canthus slightly narrower than eyes, circumocular depression distinct; eye protruding outside, laterally narrowed (between tempus and genal canthus 5 ommatidia visible); tempus distinctly protruding outside.

Pronotal sides rounded or subparallel, anterior angles slightly protruding frontwards (pl/lapa ca. 11.0), posterior angles sharp, protruding beyond the middle of base; border of anterior margin interrupted in middle, basal border entire, lateral border narrow (bp/lbp ca 80); pronotal hypomeron evenly convex, with distinct punctures.

Elytra. Each elytron composed of 9 striae (rows) punctate-sulcate, connected as follows: 1-free, 2-9, 3-6, 4-5, 7·8; intervals moderately convex, punctation dense (distances between

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Source : MNHN, Paris

punctures equal to 1-2 puncture d'ameters); row's punctation distinct (ca 55-60 punctures in IV striae).

Prosternum with sparse punctation (figs 57-58).

Wings well developed (fig 59); metasternum and metepisternum long (cavl/metl ca. 0.8 and ml/mw ca 4 6).

Male legs. Tarsi with pubescence on underside, glossy med'an groove present on tar someres as follows. anterior and mid – absent, hind – 1 and 2 tarsomeres; fore tibiae slightly widened, with concavity on inner side (figs 60-61), mid tibia with apical denticle (figs 62-63), hind t'biae bent inside (figs 64-65); mid femora with sharp denticle on inner side (fig. 63)

Last abdominal ventrite unrimmed.

Genitalia

Female: lfb/lo ca. 6 6, p/c ca. 0 9, tc/2bc1 ca 1.1, bc1/lc1 ca. 3.3, lc1/lc2 ca. 0 4, c3/c3-c4 ca. 2.3, c4-c3/c1 ca. 0.1; bursa copulatrix without sclerite.

Male: lmb/la ca. 7.1, lbp/lap ca. 3.0.

Sexual dimorphism

Male more slender than female (male. el/eb = 1.54-1.55, female. el/eb = 1.46-1.54).

Male (f'gs 61-65)· tarsi and tibiae widened; all tibiae modified on inner side

Female: tarsi and tibiae narrow, all tibiae simple.

Distribution (maps 6, 7)

Eastern part of Africa (Southern Africa, Botswana, Congo/Zaire, Ethiopia, Kenya, Mozambique, Somalia, Sudan, Tanzania, Zimbabwe), Comoros and Madagascar.

GRANDE COMORE: Grande Comore, 1884 (*L. HUMBLOT*). – Kiiste, 1903.

MAYOTTE: Mamoudzou. – Combani, 1895 (*B. MOGENET*).

MOHELI: Moheli (1943). – Kangani. – Lac Dziani, 1969 (*Y. GOMY*).

MADAGASCAR SAMBIRANO. – Ambanjan, 1951 (*R PAULIAN*). – Mahilaka, Ambanja, 1959 – Nord de Beangona Ambevy, vallée d'Antremabe, distr d'Ambanja, II 1964 (*P. SOGA*). Ambodimadiro (*J MILLOT*). Plantations du Sambirano. – Nossi-bé, 1905 (*A. VOELTZKOW*). – Nossi-Bé, 1909, 1914, 1935.

MADAGASCAR NORD: Ambilobe, 1951 (*R. PAULIAN*).

MADAGASCAR CENTRE· Andrangoloaka. – Bealanana. MADAGASCAR EST· Andapa (*J MILLOT*). – Antalaha, 1950. – Lakato, 1964 (*G. SCHMITZ*) Maroantsetra (*J. VADON*). – Sambava, 1968 (*Y. GOMY*).

MADAGASCAR OUEST· Ambivy, 1964 (*G SCHMITZ*) Amboanio (*Mme GUILGOT*) – Ankarafantsika, Ampijoroa, 1973 (*A. PEYRIERAS*) – Ankavandra, Piste Foiroanomandidy. – Maevatanana. – Marovoay, Madagasc. occ. – Tsaramandroso, Ampijoroa

Biology

Period of adult appearance: I, II, III, IV, V, VI, VIII, IX, XI, X.

Habitat: "plantations"; altitude: 1,050 m

Source · MNHN, Paris

Zidalus insularis (Mulsant et Rey, 1853)

(Pl. 4, figs 66-69 ; pl. 32, fig. 539, maps 6, 8)

Opatrinus insularis Mulsant et Rey, 1853 320. – Gemminger et Harold, 1870: 1915; Gebien, 1910: 277, 1922: 273, 1938: 296, Chatanay, 1913 765; Gridelli, 1947: 50; Koch, 1956: 101.

Opatrinus ater Müller, 1887: 301. – Gebien, 1910. 276, 1938: 296, syn by Gebien, 1922· 273

Opatrinus insularis somalicus Gridelli, 1947 51 – Koch, 1956 101, Iwan, 1995b 380, syn. by Iwan, 2002b: 311.

Zidalus insularis: Iwan, 1995b. 380, 2002a: 107, 2002b: 311; Ferrer, 1998· 358.

Types

Opatrinus ater Müller, 1887.

– Syntypes: "Zansibar/Somaliland" (ZMAN).

Opatrinus insularis Mulsant et Rey, 1853.

– Lectotype designated by IWAN (1995b), male, "Type de Mulsant et Rey ex L Fairmaire/ *Opatrinus insularis*, type, Madagascar/Muséum Paris, Collection Léon Fairmaire, 1906/Type/*Opatrinus insularis*" (MNHN)

– Paralectotype· "Type/*Opatrinus insularis* Muls., Madag /164/Type Mulsant/Muséum Paris, Madagascar, coll Ach. Deyrolle, 1865, A Grandidier, 1875", ♀ (MNHN).

– Syntype: "Muséum Paris, Madagascar, Goudot 1834/*Opatrinus insularis*/Type" (MNHN).

Opatrinus insularis somalicus Gridelli, 1947

– Syntypes· "Belet Amin" (MCSG, MZUF).

Measurements

Body length 9.6-11,9 mm, pl/pb = 0.63-0.73, el/eb = 1.40-1 51, el/pl = 2.30-2.60, eb/pb = 1 13-1.22, clypeus – ew/ed ca. 9 3; antenna – al/apl ca. 1.3, al/was3 ca 17 0, as3/as2 ca 2 3; maxillary palp – mp/as3 ca. 1.0; scutellum – pkp/st ca 3.6; legs – tars1/2 ca. 2 5, ftibl/ftibw ca. 4 9, dtk/dod ca. 1.7, ffeml/ffemw ca. 3.1, abdomen – pav/pm ca. 1.8

Diagnostic characters

Body moderately robust - el/pl = 2.30-2.60.

Head. Genal canthus slightly narrower than eyes; circumocular depression distinct; eye indistinct protruding outside (fig. 66), laterally narrowed (between tempus and genal canthus 3 ommatidia visible).

Pronotal sides rounded (fig. 67); anterior angles slightly protruding frontwards (pl/lapa ca. 11.0), posterior angles sharp, protruding beyond the middle of base; lateral border narrow (bp/lbp ca. 70); pronotal hypomeron with 2 shallow depressions at base, punctation indistinct

Each elytron composed of 9 striae (rows) punctate-sulcate, connected as follows: 1-free, 2-9, 3-6, 4 5, 7-8; intervals moderately convex, with wrinkles near rows, punctation dense (distances between punctures equal to 0.5-1.0 puncture diameters); row's punctation distinct (ca. 30 large punctures in IV striae) (fig. 68)

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Prosternum with sparse punctation.

Wings partly reduced (fig. 69), metasternum and metepisternum short (cavl/metl ca. 1.2 and ml/mw ca. 3.6).

Male legs. Tarsi with pubescence on underside, glossy median groove present on tarsomeres as follows: anterior and mid – absent, hind – 1 and 2 tarsomeres; fore tibiae slightly widened, with concavity on inner side, mid tibia with preapical denticle, hind tibiae straight, mid femora simple.

Last abdominal ventrite unbordered.

Genitalia

Female: lfb/lo ca. 6 8, p/c ca 0 9, tc/2bc1 ca. 1.1, bc1/lc1 ca 3.5, lc1/lc2 ca 0.4, c3/c3-c4 ca. 2 6, c4-c3/c1 ca. 0.1; bursa copulatrix without sclerites.

Male· lmb/la ca. 6.5, lbp/lap ca. 3.2

Sexual dimorphism

Male body more slender than female (male. el/eb = 1 44-1.51, female: el/eb = 1.40-1.49).

Male: tarsi and tibiae widened; all tibiae modified on inner side

Female: tarsi and tibiae narrow, all tibiae simple

Distribution (maps 6, 8)

Eastern part of Africa (Kenya, Somalia, Tanzania), Comoros and Madagascar.

GRANDE COMORE· Grande Comore, 1884 (*L HUMBLOT*). – Gr Comoro, 1952 (*J. MILLOT*) – La Grille, Grande Comore, 1953 (*RAHARIZONINA*) – N'Tsoudjini, Grande Comore, 1980 (*P. VIETTE*).

MAYOTTE: – Mayotte, 1884 (*L. HUMBLOT*). – Mayotte, 1901 (*TSCHITSCHERINE*), Combani, I Mayotte, 1895 (*B MOGENET*) - de Fagmorean, Mayotte. – Mamoudzou, Mayotte, 1956 (*P. A. ROBINSON*). – I. Pamanzi, près Mayotte, 1897 (*Ch. ALLUAUD*).

MOHELI: Bandamelé, Mohéli, 1958 (*RAHARIZONINA*). – Fomboni, Mohéli, 1955 (*P.A ROBINSON*). – Fomboni, Mohéli, 1958 (*RAHARIZONINA*). - Lac Iconi, Mohéli, 1958 (*RAHARIZONINA*). – Moihani, Moheli, 1969 (*Y. GOMY*)

MADAGASCAR SAMBIRANO: – Ambanja, Mahilaka, 1959 (*R E.*). – Heli Ville-Bundilana, 1959 (*R. E.*). – Hellville, Nossi bé (*TSCHITSCHERINE*). – Hellville, Prov. Nossi-bé, 1921 (*G. PETIT*). – Forêt Loukoubé, Nossi-bé, 1897 (*Ch. ALLUAUD*) – Loucoubé, 1878 (*A STUMPFF*). – Nossi-bé, 1935.

MADAGASCAR NORD· – "Cap Diego" = Diego-Suarez [= Antsiranana], 1919 (*Lieutenant DECARY*). – Vohemar.

MADAGASCAR EST: – Andranofotsy (*J MILLOT*). – Antalaha (*J. MILLOT*). – Sainte Marie, 1847 (*CLOUE*).

MADAGASCAR OUEST: – Belo sur Tsiribihina,1852 Env. de Marovoay, 1911 (*J. DESCARPENTRIES*).

Biology

Period of adult appearance: II, III, V, VI, VIII, IX, X, XI.

Source · MNHN, Paris

Zidalus servus (Mulsant et Rey, 1853)

(Pl. 4, 5, figs 70-86 ; pl. 32, fig. 540, maps 6, 9)

Opatrinus servus Mulsant et Rey, 1853: 317. – Gemminger et Harold, 1870· 1915; Gebien, 1910. 277, 1938· 296; Gridelli, 1947: 45; Koch, 1956· 112; Ardoin, 1963: 222, 1969a· 143, Kaszab, 1963: 344; Kulzer, 1963· 399, Iwan, 1990. 429

Opatrinus setuliger Müller, 1887. 301 – Gebien, 1910: 277, 1938: 296; Gridelli, 1947 43; Koch, 1956. 116; Kaszab, 1963: 344; syn. by Iwan, 1995b: 386.

Opatrinus setuliger camerunensis Gridelli, 1947. 44; Koch, 1956· 117, syn by Iwan, 2002b· 313.

Zidalus servus Iwan, 1995b: 386, 2002a 107, 2002b: 313; Iwan et Bečvář, 2001. 79.

Types

Opatrinus servus Mulsant et Rey, 1853.

– Lectotype: designated by IWAN (1995b), male, "Type Mulsant/Guinée, Bacardi/*Opatrinus servus* Muls., Guinée/Type/Muséum Paris, coll. Oberthür ex coll. Deyrolle" (MNHN).

– Paralectotypes: "*O. servus*, ex coll. Oberthür, ex coll Deyrolle", "*Dendarus exaratus*, *Opatrinus servus*, Muséum Paris", ♀ (MNHN), "*Opatrinus servus*, "Sénégal", Type", "Muséum Paris, coll. L. Fairmaire 1906", ♀ (MNHN).

Opatrinus setuliger Muller, 1887.

– Lectotype. designated by IWAN (1995b), female, "Bradshaw Zambesi 1878; 342/Geschenk v. Ulsen, 1881, Clement Muller *determ* , setuliger Cl M.Cotype: *Opatrinus setuliger* Cl. Mull., 1887/Coll. Natura Artis Magistra" (ZMAN).

– Paralectotypes· "Bradshaw Zambesi 1878/342/Cotype *Opatrinus ater* Cl Muller 1887/setuliger *det.* Gridelli, 1946/Coll. Natura Artis Magistra" (ZMAN).

Opatrinus setuliger camerunensis Gridelli, 1947.

– Syntypes· "Bamum, luglio 1912" (MCSN).

Measurements

Body length 9.1-13,3 mm, pl/pb = 0.58-0.65, el/eb = 1.44-1.79, el/pl = 2 90-3.25, eb/pb = 1.21-1.28; clypeus – ew/ed ca. 11.5; antenna – al/apl ca. 1.5, al/was3 ca 17.0, as3/as2 ca. 2.6; maxillary palp – mp/as3 ca. 1.3; scutellum – pkp/st ca. 3.5, legs – tars1/2 ca 2.0, ftibl/ftibw ca. 5.0, dtk/dod ca. 2.2, ffeml/ffemw ca. 3.5; abdomen – pav/pm ca. 1.8.

Diagnostic characters

Body slender - el/pl = 2.90-3.25.

Head. Genal canthus slightly narrower than eyes; circumocular depression distinct; eye strongly protruding outside (fig 70), laterally narrowed (between tempus and genal canthus 5 ommatidia visible); antenna long (fig. 71); mentum as in fig. 72

Pronotal sides slightly rounded or subparallel (fig 73); anterior angles slightly protruding frontwards (pl/lapa ca. 13 0), posterior angles right, protruding beyond the middle of base; lateral border narrow (bp/lbp ca. 75), pronotal hypomeron evenly convex, punctation large, fused at lateral margins (forming irregular, short rows).

Each elytron composed of 9 striae (rows) punctate-sulcate, connected as follows· 1 free, 2-9, 3 6, 4-5, 7-8; intervals moderately convex, punctation dense (distances between punctures

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Source · MNHN, Paris

equal to 0.5-1.0 puncture diameters); row's punctation moderate (ca 55 60 large punctures in IV striae)

Prosternum with dense punctation (fig 74), punctation of prosternal process as in fig 75.

Wings full developed; metasternum and metepisternum long (cavl/metl ca. 0 6 et ml/mw ca. 5.1).

Male legs Tarsi with pubescence on underside, glossy median groove present on tarsomeres as follows: anterior and mid – absent, hind – 1 and 2 tarsomeres; fore tibiae slightly widened, with wide concavity on inner side (figs 76 77); mid tibia with apical denticle (figs 78-79); hind tibia bent inside (figs 80-81); mid femora simple.

Last abdominal ventrite unbordered

Genitalia

Female (figs 82-83) lfb/lo ca. 6 2, p/c ca. 0.8, tc/2bc1 ca. 1.1, bc1/lc1 ca. 3.1, lc1/lc2 ca. 0.5, c3/c3-c4 ca. 1.9, c4-c3/c1 ca. 0.1; bursa copulatrix simple.

Male (figs 84-86): lmb/la ca. 7.4, lbp/lap ca. 2.7.

Sexual dimorphism

Male body more slender than female (male: el/eb = 1.49 1.71, female· el/eb = 1.44-1.53).

Male (figs 76-81)· tarsi and tibiae widened; all tibiae modified on inner side

Female· tarsi and tibiae narrow, all tibiae simple

Distribution (maps 6, 9)

Tropical Africa (Burundi, Cameroon, Congo/Zaire, Dahomey, Ethiopia, Guinea, Kenya, Mozambique, Nigeria, Uganda, Rwanda, Senegal, Sierra Léone, Tanzania, Chad, Zambia, Zimbabwe) and Madagascar.

– MADAGASCAR NORD: – Ambodiangezoka, 1938 (*J. VADON*).

– MADAGASCAR OUEST: – Ankarafantsika, Ampijoroa, 1973 (*A PEYRIERAS*)

– MADAGASCAR SUD: – Imanombo, 1901 (*Capitaine VACHER*). – Pays Mahafaly, 1900 (*BASTARD*)

Biology

Period of adult appearance: I, III, IV, V, XII.

Habitat (data from African specimens) · "à la lumière", "récolté dans l'humus", "récolté dans racines de roseaux", "récolté dans détritus de manioc"; altitude up to 2,010 m

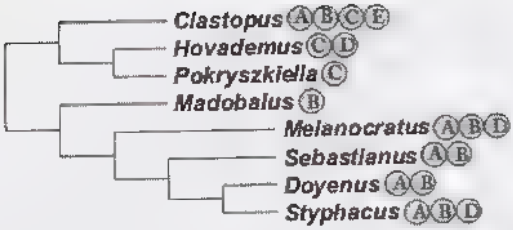
MELANOCRATOID GROUP

This monophyletic group occurs only in Madagascar (cladogram 3, map 2).

The group is characterized by the shape of clypeus (distinctly emarginate in the middle – ew/ed " 4.0) and mentum (median keel short, obtuse).

The structure of female *genitalia* is adapted for ovoviviparity – short, wide ovipositor, and weakly sclerotized ventral side.

Source · MNHN, Paris



Cladogram 3. Phylogeny of the melanocratoid group with distribution of genera. A, B, C, D, E – areas of endemism (see map 3).

Genus *Clastopus* Fairmaire, 1898

Clastopus Fairmaire, 1898 407. Gebien, 1910 272, 1938: 291; Ferrer, 1998 358; Iwan, 2001c: 500, 2002a. 60, 2002b: 259, 2005: 23.

Hovademulus Iwan, 1996: 390. Iwan, 1998e: 331, syn. by Iwan, 2001c. 500; type species: *Selinus punctipennis* Fairmaire, 1902 (*original designation*).

Genus type species

Clastopus eurynotoides Fairmaire, 1898 (designated by monotypy)

Systematic position

Clastopus is the nearest to *Hovademus* and *Pokryszkiella* by similar structure of pronotum: posterior angles short, not reaching middle of the base; basal border interrupted medially. *Clastopus* differs from both these genera in having a narrow border of prosternal process and short metasternum (cavl/metl = 2 7-3.2).

Measurements

Body length 8.0-14 2, pl/pb = 0.63-0 77, el/eb = 1.14-1 42, el/pl = 1 91-2.29, eb/pb = 1.11-1.25.

Diagnostic characters

Head. Clypeus with deep and wide median emargination (ew/ed = 2.7-3.5), genal canthus equal or slightly narrower than eyes, circumocular depression distinct, eye laterally narrowed (between tempora and genal canthus 3-4 ommatidia visible) Antenna moderately long (al/apl = 0 88-0.95) and thin (al/was3 = 15.0-16.4), 3rd antennomere short (as3/as2 = 2.0-2 6), 7-11 distal antennomeres evenly widened, transverse. Mentum with short lateral wings, mid part short and obtuse, median keel narrow and shortened; submentum triangular with slightly elongated base Last segment of maxillary palp moderately wide (mp/as3 ca. 1.2)

Pronotum with sides slightly rounded; pronotal hypomeron evenly convex, punctation extremely fine; anterior angles moderately protruding frontwards (pl/lapa = 8.6-13 3); posterior angles right, not protruding beyond the middle of base, base bi-sinuately emarginate; border of anterior and posterior margins widely interrupted in middle, lateral border moderately wide (bp/lbp = 24-33), of even width along its whole length anterior to posterior angles.

Scutellum narrow at base (pkp/st = 4.0-5.0), with base depressed below the plane of elytra.

Elytra. Each elytron composed of 9 striae (rows), sides rounded, tucked in posteriorly; intervals with extremely fine and sparse pucturation; anterior margin (base) bisinuate and unbor-

Source : MNHN, Paris

dered, upper edge of elytral base convex from scutellum, disappearing just before humeri, base of elytra lateral of scutellum not depressed; elytral humeri rounded and not protruding outwards, situated at the same level as the scutellum, epipleuron flat, evenly narrowing towards apex, outer margin straight, apical part of epipleuron flat, inner margin unbordered

Prosternum evenly convex, anterior margin with narrow border, prosternal process protruding towards mesosternum with narrow border at apex.

Wings well developed

Metasternum between insertions of mid and hind coxae short (cavl/metl = 2.1-2.9)

Metepisternum rectangular, moderately long (ml/mw = 2.7-3.1)

Legs Hind tarsi moderately long in both sexes (tars1/2 = 1.9-2.3), fore tibia slender, slightly widened towards apex (ftibl/ftibw = 3.6-4 5), outer apical denticle straight; outer margin of fore, mid and hind tibiae in both sexes simple, inner spur of hind tibia moderately long (dtk/dod = 1.5-2.4), fore femur distinctly widened (ffeml/ffemw = 2 8-4 0).

Abdomen smooth; bordering of the last abdominal ventrite absent, process of I abdominal ventrite wide (pav/pm = 1.3-1 8).

Genitalia

Female. lfb/la = 4.0-6.0, p/c = 1.10 1.35, tc/2bc1 = 0 8 0.9, first plate of coxite moderately wide (bc1/lc1 = 2.3-2.5) and long (c1/c2 = 1 2-1.3), c3/c3-c4 = 2 2-3 0, c4-c3/c1 = 0.1-0.3.

Male: lmb/la = 5.6-6 0, lbp/lap = 2.3-2.8.

Sexual dimorphism

Male body more slender than female

Male: anterior tarsi widened, inner side of tibiae and femora with structures specific for each species.

Female: anterior tarsi and tibiae simple.

Species composition

IWAN's revision (2001c) presented new interpretation of the *Clastopus*, which is composed of 4 species: *Clastopus eurynotoides* Fairmaire, 1898, *C ordinarius* (IWAN, 1996), *C. tenuiculus* (IWAN, 1996) and *C. aberlenci* Iwan, 2005.

Distribution (map 10)

Malagasy endemic.

Clé d'identification des espèces

1. Antennomère XI un peu plus long que large (pl. 5, fig 88) ; dépression circumoculaire peu marquée, avec de courtes stries sur la face interne (pl. 5, fig 87 ; pl. 7, fig. 110) ; intervalles élytraux fortement convexes (pl 5, fig 92 ; pl. 7, fig. 114) , stries élytrales profondes, à ponctuation fine à peine visible (pl. 5, fig 93 , pl. 7, fig 115) **2**

— Antennomère XI nettement plus long que large (pl. 7, fig 123) ; dépression circumoculaire profonde, avec de longues stries sur la face interne (pl. 6, fig 102 ; pl. 7, fig 122) ; intervalles élytraux plats , stries élytrales peu profondes, à forte ponctuation bien visible (pl. 6, fig. 106 ; pl. 8, fig. 127) **3**

Source : MNHN, Paris

2. Rebord de la saillie prosternale effacé à l'apex (pl. 7, fig. 116) ; intervalles élytraux lisses (pl. 7, fig. 115) ; élytre modérément concave vers l'apex . . ... ***ordinarius*** (Iwan)

— Saillie prosternale entièrement rebordée (pl. 6, fig. 95) ; intervalles élytraux avec de fines rides le long des stries (pl. 5, fig. 93) ; élytre modérément convexe vers l'apex (une partie des intervalles IX visible par dessous) .... ***aberlenci*** Iwan

3. Bords latéraux du pronotum à rebords plus larges (bp/lbp ca. 24) avec un sillon longitudinal (pl. 6, fig. 105) ; stries élytrales ponctuées (pl. 6, fig. 106) ; tibia antérieur du mâle avec une légère concavité sur la face interne (pl. 6, fig. 109), tibia médian du mâle inerme, bord interne du fémur du mâle glabre .... . . ***eurynotoides*** Fairmaire

— Bords latéraux du pronotum à rebords plus étroits (bp/lbp ca. 33), sans sillon (pl. 8, fig. 125) ; stries élytrales à points ridés (pl. 8, fig. 126) ; tibia antérieur du mâle avec une profonde concavité sur la face interne (pl. 8, fig. 128), tibia médian du mâle avec une dent apicale (pl 8, fig 129), bord interne du fémur du mâle avec une rangée de soies (pl. 8, fig. 131, 132) .... ***tenuiculus*** (Iwan)

Identification key for the species

1. Antennomere XI moderately elongated (pl. 5, fig. 88), circumocular depression shallow, with short row on inner side (pl. 5, fig. 87; pl. 7, fig. 110); elytral intervals strongly convex (pl. 5, fig. 92; pl. 7, fig. 114), elytral rows deep, punctures small, barely visible (pl. 5, fig. 93; pl. 7, fig. 115) **2**

— Antennomere XI distinctly elongated (pl. 7, fig. 123); circumocular depression deep, with long row on inner side (pl. 6, fig. 102; pl 7, fig. 122); elytral intervals flat; elytral rows shallow, punctures large, well visible (pl. 6, fig. 106; pl. 8, fig. 127) **3**

2. Border of prosternal process interrupted at apex (pl. 7, fig 116); elytral intervals smooth (pl. 7, fig 115); elytra moderately not tucked in posteriorly ..... ***ordinarius*** (Iwan)

— Prosternal process entire bordered (pl. 6, fig. 95); elytral intervals with subtle impressions near rows (pl. 5, fig. 93); elytra moderately tucked in posteriorly (part of IX intervals visible from the underside) . . .. ***aberlenci*** Iwan

3. Lateral margins of pronotum widely bordered (bp/lbp ca. 24) and provided with a longitudinal groove (pl. 6, fig. 105); elytral striae punctate (pl. 6, fig. 106), male fore tibia with shallow concavity on inner side (pl. 6, fig. 109), male mid tibia simple, male femora bare on inner margin .... ***eurynotoides*** Fairmaire

— Lateral margins of pronotum narrowly bordered (bp/lbp ca. 33), without groove (pl. 8, fig. 125); elytral striae punctate-sulcate (pl. 8, fig. 126); male fore tibia with deep concavity on inner side (pl 8, fig. 128), male mid tibia with apical denticle (pl. 8, fig. 129), male femora with row of setae on inner margin (pl. 8, figs 131, 132) .... ***tenuiculus*** (Iwan)

Clastopus aberlenci Iwan, 2005

(Pl. 5,6, figs 87-101; pl. 28, figs 522-526; pl. 32, fig 541, map 10)

Clastopus aberlenci Iwan, 2005: 25.

Source : MNHN, Paris

Holotype

Female, "Andohahelo, 1,800 m, RP/Institut scientifique Madagascar/Muséum Paris" (MNHN).

Measurements

Body length 14.2 mm, pl/pb = 0.73, el/eb = 1 30, el/pl = 2.29, eb/pb = 1.25, clypeus – ew/ed ca. 3 40; antenna – al/apl ca. 0 88, al/was3 ca 15 0, as3/as2 ca. 2.4, maxillary palp – mp/as3 ca 1 2; scutellum – pkp/st ca 5.0; metasternum – cavl/metl ca 2 2, metepisternum – ml/mw ca 2 8; legs – tars1/2 ca 1.9, ftibl/ftibw ca 3.7, dtk/dod ca. 1.5, ffeml/ffemw ca. 3.3; abdomen – pav/pm ca. 1.8.

Diagnostic characters

Head (fig 87). Circumocular depression shallow, with short row on inner side; distal segments (antennomere 7-11) evenly widened, elongated (fig. 88), mentum as in fig. 89; last segment of maxillary palp moderately wide (fig. 90).

Pronotum rounded, subparallel 2/3 at base (fig. 91); pronotal disc evenly convex, punctures extremely fine and sparse, anterior angles slightly protruding frontwards (pl/lapa = 10.0), posterior angles short, not protruding beyond the level of the middle of base, base distinctly bisinuate; border of the anterior and basal margin interrupted in the middle, lateral border wide (bp/lbp = 30), even width along its whole length

Scutellum as in fig. 92.

Elytron composed of 9 rows (striae punctate-sulcate) connected as follows: 1-9, 2-7, 3-6, 4-5, 8-free, intervals smooth with subtle impressions near rows (fig 93); elytra moderately tucked in posteriorly (part of IX intervals visible from the underside); anterior margin (base) bisinuate and unbordered, upper edge convex medially (disappeared just before humeri) (fig. 92); elytral humeri rounded, situated at the level of scutellum; base of elytra lateral of scutellum not depressed; epipleuron flat and evenly narrowing towards apex, outer margin straight, inner margin of apical part unbordered and almost rounded at apex (fig. 94).

Prosternum evenly convex, with narrow, distinct border of anterior margin; prosternal process protruding towards mesosternum, bordering wide and entire (fig 95).

Metepisternum rectangular and moderately long (fig. 96).

Legs, fore tibia moderately widened towards apex (figs 97, 98), outer apical denticle straight, outer margin of fore and mid tibia simple; fore femur distinctly widened (fig. 99).

Genitalia

Female (figs 100, 101): lfb/lo = 5 5, p/c = 1.30, tc/2bc1 = 0 9, bc1/lc1 = 2.3, c1/c2 = 1.3, c3/c3-c4 = 3.0, c4-c3/c1 = 0.1

Male. Unknown.

Distribution (map 10)

MADAGASCAR EST: – Massif de l'Andohahelo (*R. PAULIAN*).

Biology

Habitat: altitude: 1,800 m

Clastopus eurynotoides Fairmaire, 1898

(Pl. 6, figs 102-109; pl. 32, fig. 542, map 10)

Clastopus eurynotoides Fairmaire, 1898· 408. Gebien, 1910. 272, 1938: 291; Ferrer, 1998· 358 (the paper concerns *Lechius abacoides* Fairm); Iwan, 2001c: 501, 2002a: 61, 2002b· 259, 2005· 25

Source · MNHN, Paris

Selinus punctipennis Fairmaire, 1902: 329. Gebien, 1910 278, 1938. 298; syn by Iwan, 2001c: 501.

Hovademulus punctipennis· Iwan, 1996: 392, 1998e· 335.

Types

Clastopus eurynotoides Fairmaire, 1898.

Holotype: female (?) [spoilt specimen, without legs], "Bemarivo, Camuset/Type/*Clastopus eurynotoides* n. g. Madag." (MNHN).

Selinus punctipennis Fairmaire, 1902

– Holotype: male "Muséum Paris, 1906 Coll Léon Fairmaire/Ankarahitra, Perrier/*Selinus punctipennis* Fm. Madag /Type" (MNHN)

Locus typicus

Bemarivo (S Madagascar)

Measurements

Body length 11.0-12 0 mm, pl/pb = 0.63-0.70, el/eb = 1.14-1 29, el/pl = 1.91-2.20, eb/pb = 1 11-1 22; clypeus – ew/ed ca. 2.70, antenna – al/apl ca 0.95, al/was3 ca 15 5, as3/as2 ca. 2.0, maxillary palp – mp/as3 ca 1.2; scutellum – pkp/st ca. 4 7; metasternum – cavl/metl ca 2 7; metepisternum – ml/mw ca 2.7, legs – tars1/2 ca. 2 1, ftibl/ftibw ca 4 5, dtk/dod ca. 1.7, ffeml/ffemw ca. 4.0; abdomen – pav/pm ca 1 7;

Diagnostic characters

Head (fig 102). Circumocular depression deep, with long row ventrally, antennomere 11 elongated (fig. 103); mentum as in fig 104. Pronotum trapezoid (fig. 105), with sides slightly rounded; anterior angles moderately protruding anteriorly (pl/lapa ca. 8.6), lateral border wide (bp/lbp ca. 24), even width along its whole length

Elytron composed of 9 rows (striae punctate, fig 106) connected as follows: 1-9, 2-7, 3-4, 5-6, 8-free, sometimes mod'fied: 1 free, 2-9, 3-6, 4-5, 7-8; intervals flat and smooth, elytra rounded, moderately tucked in posteriorly (part of IX intervals visible from the underside) (fig. 107).

Prosternum with prosternal process protruding towards mesosternum, bordering wide and entire (fig. 108).

Male legs. Tarsi with pubescence on underside, glossy median groove present on tarsomeres as follows· anterior– absent, mid – 4, hind – 1 3 tarsomeres, fore tibiae slightly widened, with shallow concavity on inner side (fig. 109); mid tibia simple, hind tibia bent inside; all tibiae with long setae, femora bare.

Genitalia

Male, lmb/la ca. 5.6, lbp/lap ca. 2.4

Sexual dimorphism

Body male more slender than female (male: el/eb = 1 29; female· el/eb = 1.14-1.16).

Legs structure in male as in fig. 109.

Distribution (map 10)

MADAGASCAR OUEST: – Bemarivo (*CAMUSET*) – Ankarahitra (*PERRIER*). – Maevatanana (*ex coll. LE MOULT*)

Source · MNHN, Paris

Biology
Period of adult appearance: V.

Clastopus ordinarius (Iwan, 1996)
(Pl. 7, figs 110-121; pl. 32, fig. 543, map 10)

Hovademulus ordinarius Iwan, 1996: 392. Iwan, 1998e. 335, 2001b· 501, 2002a: 61, 2002b: 260, 2005: 23.

Holotype
Male, "Muséum Paris, 1906 Coll. Léon Fairmaire/Plateau de l'Androy, Rég d'Ambovombe" (MNHN).

Measurements
Body length 13.3-13 7 mm, pl/pb – 0 71-0.73, el/eb – 1.32-1.42, el/pl = 2.07-2.18, eb/pb = 1 11 1.18; clypeus – ew/ed ca 3.0, antenna – al/apl ca. 0.95, al/was3 ca. 16 4, as3/as2 ca 2 6, maxillary palp – mp/as3 ca. 1.2; scutellum pkp/st ca. 4.9; metasternum – cavl/metl ca. 2.1; metepisternum ml/mw ca 3.1; legs – tars1/2 ca. 1 9, ftibl/ftibw ca 3 6, dtk/dod ca 2.4, ffeml/ffemw ca. 3 7, abdomen – pav/pm ca 1 3

Diagnostic characters
Head as in fig 110 Circumocular depression shallow, with short row ventrally, antennomere 11 moderately elongated (fig 111), mentum as in fig 112 Pronotum, with sides slightly rounded, subparallel at 2/3 from base (fig. 113), anterior angles moderately protruding frontwards (pl/lapa ca. 8.6), lateral border moderately wide (bp/lbp ca. 32), even width along its whole length.

Elytron composed of 9 rows (striae punctate-sulcate) connected as follows: 1-9, 2-7, 3-6, 4 5, 8 free; rows deep, with small punctures (figs 114 115); intervals flat and smooth; elytra slightly rounded, not tucked in posteriorly

Prosternum with prosternal process protruding towards mesosternum, bordering wide and interrupted at apex (fig. 116).

Male legs Tarsi with pubescence on underside, glossy median groove present on tarsomeres as follows: anterior and mid – 4, hind – 2-3 tarsomeres, fore tibiae slightly widened, with deep concavity and denticle on inner side (fig. 117); mid tibia with apical denticle (fig. 118).

Genitalia
Female (fig 119)· lfb/lo = 6.0, p/c = 1.1, tc/2bc1 = 0 9, bc1/lc1 = 2.5, lc1/lc2 = 1.2, c3/c3-c4 = 2.2, c4-c3/c1 = 0 2

Male (fig. 120-121): lmb/la ca. 6.0, lbp/lap ca. 2.3

Sexual dimorphism
Body male slender than female (male el/eb = 1.42; female el/eb = 1.32)

Legs structure in male as in figs 117-118

Distribution (map 10)
MADAGASCAR SUD: – Plateau de l'Androy, Rég d'Ambovombe

Source · MNHN, Paris

Clastopus tenuiculus (Iwan, 1996)

(Pl. 7, 8, figs 122-134 ; pl. 33, fig. 544, map 10)

Hovademulus tenuiculus Iwan, 1996: 394 Iwan, 1998e. 335, 2001c· 501, 2002a: 61, 2002b: 260, 2005· 25.

Holotype

Male, "Muséum Paris, I 1933, A Seyrig/Madagascar, Bekily, sud de l'île" (MNHN).

Measurements

Body length 8.8 10.0 mm, pl/pb = 0 71-0.77, el/eb = 1.30 1.40, el/pl = 2.00-2.28, eb/pb ca. 1.14; clypeus – ew/ed ca. 3 5; antenna – al/apl ca 0 98, al/was3 ca. 16 4, as3/as2 ca 2.2, maxillary palp – mp/as3 ca 1.2; scutellum – pkp/st ca. 4.0; metasternum – cavl/metl ca 2 9; metepisternum – ml/mw ca 2.8; legs – tars1/2 ca 2.3, ftibl/ftibw ca. 4.0, dtk/dod ca 1.5, ffeml/ffemw ca 2.8; abdomen – pav/pm ca. 1.7;

Diagnostic characters

Head as in fig 122. Circumocular depression deep, with long row ventrally, antennomere 11 distinctly elongated (fig. 123); mentum as in fig. 124. Pronotum, with sides slightly rounded (fig 125); anterior angles slightly protruding frontwards (pl/lapa ca. 13 3), lateral border moderately wide (bp/lbp ca. 33), width even along its whole length.

Elytron composed of 9 rows (striae punctate) connected as follows: 1-9, 2-7, 3-4, 5 6, 8-free, rows shallow, with large punctures (fig. 126); intervals flat and smooth; elytra slightly rounded, not tucked in posteriorly.

Prosternum with prosternal process protruding towards mesosternum, bordering wide and complete (fig. 127).

Male legs. Fore tibia with deep, elongated concavity on inner side (fig 128), mid tibia with apical denticle (fig. 129); hind tibia slightly bent inside (fig. 130); all tibiae and femora with setae on inner sides (figs 131-132)

Genitalia

Female (figs 133-134). lfb/lo = 4.0, p/c = 1 35, tc/2bc1 = 0.8, bc1/lc1 = 2.4, lc1/lc2 = 1 2, c3/c3-c4 = 2.3, c4-c3/c1 = 0.30.

Male: lmb/la ca. 6 0, lbp/lap ca. 2.8.

Sexual dimorphism

Body male more slender than female (male· el/eb = 1 40, female· el/eb = 1.30).

Legs structure in male as in figs 128-132

Distribution (map 10)

MADAGASCAR CENTRE (pentes occidentales). – Bekily (A. SEYRIG 1933) – 30 km SSE of Betroka, 2,5 km N of Alankira, 1999 (J. JANÁK).

Biology

Period of adult appearance: I.

Habitat: altitude 400 m-1,394 m.

Source · MNHN, Paris

Genus *Doyenus* Iwan, 1996

Doyenus Iwan, 1996: 386. – Iwan, 2002a: 65, 2002b: 264.

Genus type species
Doyenus uncus Iwan, 1996; *original designation.*

Systematic position
Doyenus is the closest related to genera *Styphacus* and *Sebastianus* (fore femur robust, elytral base bordered, mid tibia with denticle on other side).

The unique structure of the male hind femur (strongly bent inside) distinguishes *Doyenus* from all the other genera of Platynotini.

Measurements
Body length 19 0-27.0, pl/pb = 0.67-0.75, el/eb = 1.29-1.41, el/pl – 1.87-2.15, eb/pb = 1.04-1 08

Diagnostic characters
Head elongated, with depressions dorsally, clypeus with deep and wide emargination (ew/ed = 3 1-3 4), genal canthus equal to eye, circumocular depression absent, eye narrowed laterally (between tempus and genal canthus 5 ommatidia visible). Antenna short (al/apl ca. 0.6) and moderately robust (al/was3 ca. 13.0), 3rd antennomere moderately long (as3/as2 = 2.4-3 0), distal segments (antennomeres 7-11) evenly widened, transverse Mentum with short lateral wings, mid part short and wide, median keel shortened, submentum triangular with slightly elongated base. Last segment of maxillary palp narrow (mp/as3 = 1.0-1.3).

Pronotum with rounded sides; pronotal hypomeron evenly convex and smooth, with narrow, longitudinal depressions near lateral margins; anterior angles moderately protruding frontwards (pl/lapa = 12.0 18.0), posterior angles sharp, slightly protruding outwards and beyond the middle of base; base slightly doubly sinuately emarginate, border of anterior margin widened medially, lateral border moderately narrow (bp/lbp = 24-49), of even width along its whole length, basal border entire (slightly widened in middle).

Scutellum wide at base (pkp/st ca 2.0), depressed below the plane of elytra

Elytron of 9 rows (striae sulcate) connected as follows: 1-9, 2-7, 3-6, 4-5, 8 free, intervals distinctly convex, smooth (punctures invisible); elytra narrowed apicaly, widest at level of hind femora, slightly tucked in posteriorly (a part of interval IX visible from underside); anterior margin (base) bisinuate and bordered (reaching humeri), upper edge convex medially (disappearing just before humeri); elytral humeri rounded and not protruding outwards, situated at the level of scutellum, epipleuron flat and widened at the level of 3 4 abdominal ventrites, inner margin of apical part unbordered and rounded at apex.

Prosternum evenly convex with narrow border of anterior margin, prosternal process protruding towards mesosternum, bordering wide and entire.

Wings entirely reduced

Metasternum between insertions of mid and hind coxae moderately short (cavl/metl ca 1 5).

Metepisternum rectangular and moderately long (ml/mw = 3.3-3.7)

Legs Male fore tarsi widened, all tarsi with pubescence on underside, glossy median groove present on tarsomeres as follows, male: anterior – 1, 3-4, mid – 1-4, hind – 1-3

Source : MNHN, Paris

tarsomeres, female: all tarsomeres, hind tarsi moderately long (tars1/2 = 2 0-2.2); fore tibia in both sexes widened towards apex (ftibl/ftibw = 2 5 2.8), outer apical denticle sharp and strongly produced outwards, outer margin of female fore tibia with 2 denticles (apical and median), male fore tibia simple; outer margin of mid tibia with 2 ridges and denticles, hind tibia with inner spur short (dtk/dod = 3 4-3.6); fore femur strongly widened (ffeml/ffemw = 2.6-2.7); hind male femora strongly bent inside.

Abdomen, bordering of the last abdominal ventrite absent, process of I abdominal ventrite narrow (pav/pm = 1.6-2.0).

Genitalia

Female ovipositor (see description of *D dentatus*), gonostylus present; bursa copulatrix simple, spermatheca with narrow, branched ducts; spermathecal acessory glands present.

Male: lmb/la = 9.0-9.2, lbp/lap = 2.4-3.0

Sexual dimorphism

Male body more slender than female; male abdominal ventrites 1 2 with tubercles.

Male fore tarsi widened, inner side of tibiae and femora with structures specific for each species.

Female: anterior tarsi and tibiae simple.

Species composition

Two species (*dentatus* and *uncus*) described together with the genus.

Distribution (map 11)

Malagasy endemic.

Clé d'identification des espèces

1. Milieu du mentum avec une carène obtuse (pl. 9, fig 142) ; épaules arrondies ; tibia postérieur du mâle avec une paire de dents pointues à la base (pl. 9, fig 150, 151) , sternite I et II du mâle avec de forts tubercules (pl. 9, fig. 154, 155) . ..... ***uncus*** Iwan

— Milieu du mentum avec une carène vive (pl. 8, fig. 135) ; épaules saillantes ; tibia postérieur du mâle avec une dent et une saillie émoussée à la base (pl. 8, fig. 137, 138) ; sternite I du mâle légèrement convexe au milieu, sternite II plat (pl. 8, fig. 140) ..... ***dentatus*** Iwan

Identification key for the species

1. Mid part of mentum with obtuse keel (pl. 9, fig. 142), humeral angles of elytra rounded; male hind tibia with 2 denticles at base (pl. 9, figs 150, 151), male abdominal ventrites I and II with large tubercles (pl 9, figs 154, 155) .... ***uncus*** Iwan

— Mid part of mentum with sharp keel (pl. 8, fig. 135), humeral angles of elytra protruding frontwards , male hind tibia with one denticle and a blunt convexity at base (pl. 8, figs 137, 138); male abdominal ventrite I slightly convex in middle, ventrite II flat (pl. 8, fig. 140) ..... ***dentatus*** Iwan

Source : MNHN, Paris

Doyenus dentatus Iwan, 1996
(Pl. 8, figs 135-140; pl. 33, fig 545, map 11)

Doyenus dentatus Iwan, 1996: 389. – Iwan, 2002a: 66, 2002b: 264.

Holotype
Male, "Madagascar Sud , Beloha 175 m, Ambovombe, 20 II. 58, P Griveaud" (MNHN).

Paratypes
"Juin, Muséum Paris Madagascar S District de Tsihombe, Beloha, Lieut. Decary 1919", 1 ♀ (MNHN); "Muséum Paris/Inst scient. Madagascar, Beloha 5. 8. (19)48, A R.", 1 ♀ (MNHN)

Measurements
Body length 19.0-23 0 mm, pl/pb – 0.67-0.75, el/eb = 1 36-1.41, el/pl = 1 93-2.15, eb/pb = 1.04-1 08; clypeus – ew/ed ca. 3 1; antenna – al/apl ca. 0.6, al/was3 ca. 13.0, as3/as2 ca 2.4; maxillary palp – mp/as3 ca 1.0, scutellum – pkp/st ca. 2 0, metasternum – cavl/metl ca 1 5, metepisternum – ml/mw ca 3 3; legs – tars1/2 ca. 2.3, ftibl/ftibw ca 2.5, dtk/dod ca 3 6, ffeml/ffemw ca. 2.7; abdomen – pav/pm ca. 1 6.

Diagnostic characters
Head. Mentum with distinctly convex, sharp keel (fig. 135).

Pronotum with rounded sides (fig. 136); anterior angles distinctly protruding frontwards (pl/lapa ca. 12.0), lateral border wide (bp/lbp ca. 24).

Elytra Humeral angles of elytra protruding outwards

Male legs Fore tarsi slightly widened; fore tibia with shallow, longitudinal convexity on inner side, mid tibia strongly widened; hind tibia with 2 denticles at base, slightly bent inside (figs 137-138), fore femora wide (fig. 139), hind femora distinctly bent

Male abdominal ventrite 1 – slightly convex medially, ventrite 2-5 – flat (fig 140)

Genitalia
Female: lfb/lo ca 6 6, paraproct equal to coxites p/c = 1 0; coxites triangular (tc/2bc1 ca 0.8), first coxite wide (bc1/lc1 ca 3.5) and short (c1/c2 ca 0.5), c3/c3-c4 ca. 3 0, c4-c3/c1 ca. 0.1.

Male: lmb/la ca. 9.0, lbp/lap ca. 2.4.

Sexual dimorphism
Male: body more slender – el/eb = 1 38-1 41, abdominal ventrite 1 with tubercle on the middle (fig. 140).

Female: body more robust – el/eb = 1.36-1.39, abdominal ventrite 1 flat

Legs structure as in fig 137-139

Distribution (map 11)
MADAGASCAR SUD – Beloha, Ambovombe, 1958 (*P GRIVEAUD*). – Beloha, District de Tsihombe, 1919 (*Lieutenant DECARY*). – Beloha, 1948 (*P. A. ROBINSON*)

Biology
Period of adult appearance: II, VI, VIII.

Habitat: altitude: 175 m.

Source : MNHN, Paris

Doyenus uncus Iwan, 1996
(Pl. 9, figs 141-155; pl. 33, fig. 546, map 11)

Doyenus uncus Iwan, 1996: 387. – Iwan, 2002a. 66, 2002b: 265

Holotype
Male, "Muséum Paris, Madagascar, Prov. de Tuléar, Androka, Lieut. Gaudron 1913" (MNHN).

Paratype
"Muséum Paris, Madagascar, Prov de Tuléar, G. Petit, 1926", 1 ♂ (MNHN).

Measurements
Body length 24.0-27 0 mm, pl/pb = 0.73-0.75, el/eb = 1.29 1.31, el/pl = 1.87-1.91, eb/pb = 1.07-1 08; clypeus – ew/ed ca. 3.4; antenna – al/apl ca. 0.6, al/was3 ca. 13.0, as3/as2 ca. 3.0; maxillary palp – mp/as3 ca. 1.3, scutellum – pkp/st ca. 2.0; metasternum – cavl/metl ca. 1 5; metepisternum – ml/mw ca. 3 7; legs – tars1/2 ca. 2.0, ftibl/ftibw ca. 2 8, dtk/dod ca 3.4, ffeml/ffemw ca. 2 6, abdomen – pav/pm ca. 2 0

Diagnostic characters
Head (fig. 141) Mentum with distinctly convex, obtuse keel (fig 142).

Pronotum with distinctly rounded sides (fig. 143), anterior angles protruding frontwards (pl/lapa ca. 18.0); lateral border moderately wide (bp/lbp ca. 49).

Elytra. Humeral angles of elytra rounded, slightly protruding outwards (fig. 144).

Prosternum as in figs 145-146.

Male legs. Fore tarsi slightly widened; fore tibia with shallow, longitudinal connexity on inner side (fig. 147), mid tibia strongly widened (figs 148-149); hind tibia with 2 denticles at base, and widened at 1/3 from apex (figs 150-151); fore femora as in fig. 152, hind femora distinctly bent (fig. 153).

Male abdominal ventrite 1 and 2 distinctly convex medially, ventrite 3-5 – flat (figs 154-155).

Genitalia
Male: lmb/la ca. 9.2, lbp/lap ca. 3.0.

Female: unknown.

Distribution (map 11)
MADAGASCAR SUD: – Prov. de Tuléar [= Toliara], S. P. d'Ampanihy, Androka, 1913 (*Lieutenant GAUDRON*). – Prov. de Tuléar [= Toliara], 1926 (*G. PETIT*).

Genus *Hovademus* Ardoin, 1974

Hovademus Ardoin, 1974· 165. – Iwan, 1996: 395, 2002a: 71, 2002b· 273.

Genus type species
Hovademus andringitrensis Ardoin, 1974; *original designation*

Systematic position
Hovademus is the closest related to *Pokryszkiella*, from which it differs in the following characters narrower genal canthus, unbordered anterior pronotal margin, and head structure.

Source · MNHN, Paris

Measurements

Body length 10.0-13 5.0, pl/pb = 0.65-0.80, el/eb = 1 25 1 43, el/pl = 1 97-2 11, eb/pb = 1 14-1.27.

Diagnostic characters

Head. Clypeus with deep and wide emargination (ew/ed = 3.8-4.0), genal canthus narrower than eyes; circumocular depression absent or very shallow, eye narrowed laterally (between tempus and genal canthus 3-4 ommatidia visible). Antenna moderately long (al/apl ca 0.9) and thin (al/was3 = 16 0-18 0), 3rd antennomere short (as3/as2 = 2 1-2.2), distal segments (antennomeres 7-11) evenly widened Mentum with short lateral wings, mid part short and wide, median keel shortened, submentum triangular with slightly elongated base Last segment of maxillary palp moderately wide (mp/as3 = 1.4 1.7)

Pronotal sides subparallel, pronotal hypomeron evenly convex, punctation extremely fine, anterior angles slightly protruding frontwards (pl/lapa = 15 0-25.0), posterior angles right, not protruding beyond the middle of base, base distinctly bisinuate; border of anterior and posterior margin widely interrupted in middle, lateral border moderately wide (bp/lbp = 20-32), of even width along its whole length.

Scutellum narrow at base (pkp/st = 4 8-5.6), depressed below the plane of elytra.

Elytron of 9 rows (striae punctate-sulcate) connected as follows. 1-9, 2 7, 3-6, 4-5, 8-free, intervals distinctly convex, smooth (punctures invisible), intervals with microtubules, punctures invisible; elytra convex but not tucked in posteriorly, anterior margin (base) bisinuate and unbordered, upper edge convex medially (disappearing just before humeri); epipleuron flat and evenly narrowing towards apex, outer margin straight, inner margin of apical part unbordered and almost rounded at apex.

Prosternum evenly convex with wide, disappearing border of anterior margin, prosternal process protruding towards mesosternum, bordering wide and entire at apex.

Wings entirely reduced.

Metasternum between insertions of mid and hind coxae short (cavl/metl = 2.1-2.3)

Metepisternum rectangular and moderately long (ml/mw = 2.8-3.1)

Legs, male fore tarsi strongly widened, all tarsi with pubescence on underside, glossy median groove present on tarsomeres as follows, male anterior and mid – absent, hind – 3 tarsomeres, female anterior and mid – 3-4, hind – 2-3 tarsomeres, hind tarsi moderately long (tars1/2 = 1.8-2.0), fore tibia in both sexes widened towards apex (ftibl/ftibw = 3 5-3 8), outer apical denticle straight, outer margin of fore and mid tibia simple in both sexes; male mid tibia widened; inner spur of hind tibia moderately long (dtk/dod ca. 2 3), fore femur distinctly moderately widened (ffeml/ffemw = 3.3-3.6).

Abdomen, bordering of the last ventrite absent; process of I abdominal ventrite wide (pav/pm = 2.2-2.6).

Genitalia

Female ovipositor (see description *H. pauliani*), gonostylus present, bursa copulatrix with no sclerite, spermatheca branched from the base, with narrow ducts, spermathecal accessory gland present.

Male: lmb/la ca. 5.9, lbp/lap = 2.0-2.2.

Source : MNHN, Paris

Sexual dimorphism

Male body more slender than female body

Male: fore tarsi widened, inner side of tibiae and femora with structures specific for each species.

Female: anterior tarsi and tibiae simple.

Species composition

Two species (*andringitrensis* and *pauliani*) described together with the genus.

Distribution (map 11)

Malagasy endemic.

Clé d'identification des espèces

1. Marge antérieure du mentum presque droite (pl 10, fig 171) ; face inférieure de la tête avec une cavité transverse en avant de l'aire stridulatoire gulaire (pl 10, fig. 172), prosternum et saillie prosternale légèrement convexes (pl 10, fig 176) ; côtés du pronotum parallèles à la base (pl 10, fig. 174), angle externe de l'épaule fortement saillant vers l'avant (pl 10, fig. 175) ; tibia postérieur du mâle glabre (pl. 10, fig 187), fémur postérieur du mâle avec, du côté interne, une dent et une cavité densément velue (pl. 10, fig. 188)..... ***pauliani*** Ardoin

— Marge antérieure du mentum concave (pl. 9, fig 158), face inférieure de la tête régulièrement convexe en avant de l'aire stridulatoire gulaire (pl 9, fig. 157) ; prosternum avec une profonde cavité transverse, saillie prosternale avec une dépression médiane longitudinale (pl. 9, fig. 163) ; côtés du pronotum légèrement divergents à la base (pl. 9, fig. 159) ; angle externe de l'épaule arrondi (pl. 9, fig 162) ; face interne du tibia postérieur du mâle avec une cavité fortement velue (pl. 10, fig 168, 169) ; fémur postérieur du mâle simple . . . . ***andringitrensis*** Ardoin

Identification key for the species

1. Anterior margin of mentum almost straight ((pl 10, fig. 171), head (underside) with transverse concavity anterior to stridulatory gula (pl. 10, fig. 172); prosternum and prosternal process evenly convex (pl 10, fig. 176), pronotal sides parallel at base (pl 10, fig. 174); elytral humeral angles strongly produced frontwards (pl 10, fig. 175), male hind tibia bare (pl. 10, fig. 187), male hind femur with denticle and a strongly setose concavity on the inner side (pl. 10, fig 188) . . . . ***pauliani*** Ardoin

— Anterior margin of mentum emarginate (pl. 9, fig. 158); head (underside) evenly convex anterior to stridulatory gula (pl. 9, fig 157); prosternum with transverse, deep concavity; prosternal process with longitudinal depression in the middle (pl. 9, fig. 163); pronotal sides widened at base (pl. 9, fig. 159); elytral humeral angles rounded (pl. 9, fig 162); male hind tibia thickly setose on the inner side (pl. 10, figs 168, 169); male hind femur simple . . . . . ***andringitrensis*** Ardoin

Source : MNHN, Paris

Hovademus andringitrensis Ardoin, 1974

(Pl. 9, 10, figs 156-170; pl. 33, figs 547-548, map 11)

Hovademus andringitrensis Ardoin, 1974: 166 – Iwan, 1996: 396, 2002a: 72, 2002b: 273

Holotype

Male, "Andringitra Centre, plateau Andohariana, 2,000-2,100 m, HFAM 1, 9 XI/10. XII. 1970" (MNHN)

Paratypes

"Andringitra Centre, zone sommitale, fal Ivangomena, 2,100-2,500 m, 9. XI/10. XII. 1970", 1 ♂, 1 ♀ (MNHN).

Measurements

Body length 10 5-12 0 mm, pl/pb = 0.65 0 80, el/eb = 1 25-1.37, el/pl = 2.00-2.11, eb/pb = 1 15-1 27, clypeus – ew/ed ca 3.8; antenna – al/apl ca 0.93, al/was3 ca. 18 0, as3/as2 ca 2.2, palp maxillary – mp/as3 ca. 1 7, scutellum – pkp/st ca. 4.8; metasternum – cavl/metl ca 2.3; metepisternum – ml/mw ca. 2 8; legs – tars1/2 ca. 2.0, ftibl/ftibw ca. 3.5, dtk/dod ca. 2.2, ffeml/ffemw ca. 3 6; abdomen – pav/pm ca. 2.6.

Diagnostic characters

Head (figs 156-157), underside of the head anterior to stridulatory gula evenly convex. Circumocular depression very shallow; anterior margin of mentum emarginate (fig. 158)

Pronotal sides arcuate, subparallel, widened at base (fig 159); anterior angles slightly protruding frontwards (pl/lapa ca. 25.0), lateral border wide (bp/lbp ca 20)

Elytra (figs 160-161), humeral angles rounded, situated at level of scutellum base, not protruding outwards (fig. 162).

Prosternum with transverse, deep concavity; prosternal process with longitudinal depression in the middle (fig. 163).

Male legs. Fore tibia with deep concavity 1/3 from apex (figs 164 165); mid tibia strongly widened, with two denticles and longitudinal concavity inside (figs 166 167); hind tibiae strongly bent and pilose on inner side (figs 168 169); hind femur simple

Genitalia

Female *genitalia* as in *H. pauliani*.

Male *genitalia* as in fig. 170, processes of apical part of aedeagus slightly bent outwards; lmb/la ca. 5.9, lbp/lap ca. 2.2

Sexual dimorphism

Male body more slender than female (male: el/eb = 1.37, female: el/eb = 1.25)

Legs structure as in figs 164-169.

Distribution (map 11)

MADAGASCAR CENTRE/DOMAINE DES HAUTES MONTAGNES. – Massif de l'Andringitra, Plateau d'Andohariana, Andringitra Centre, 1970. – Andringitra Centre, cirque Boby, zone sommitale, 2,500 m, 1970.

Biology

Period of adult appearance: XI, XII.

Habitat: "haut fourré de montagne à Dombeya", "haut fourré de montagne à Philippia (zone sommitale)"; altitude: 2,000-2,100 m, 2,500 m

Source : MNHN, Paris

Hovademus pauliani Ardoin, 1974
(Pl. 10, figs 171-191; pl. 33, figs 549-550, map 11)

Hovademus pauliani Ardoin, 1974. 166. – Ardoin, 1976: 5; Iwan, 1996: 398, 2002a: 72, 2002b: 273.

Holotype and allotype
Male, "Andohahelo, 1,800 m, Madagascar Sud, I. 1954, R Paulian" (MNHN) Allotype: female, Andohahelo, 1,800 m, Madagascar Sud, I 1954, R Paulian (MNHN)

Paratypes
"Paratype *Hovademus pauliani* n. sp P. Ardoin, Chaînes anosyennes, S.O du Trafonaomby plateau Andohahelo 1,770-1,950 m. V. 1972", 1 ♂ (HNHM), "Muséum Paris, coll. P Ardoin 1978, Paratype *Hovademus pauliani* n. sp., P Ardoin, Institut scientifique Madagascar, Andohahelo (1,800 m.) IV. 54. (R.P)", 1 ♂ (MNHN).

Measurements
Body length 10 0-13.5 mm, pl/pb = 0.73-0.80, el/eb = 1.28-1 43, el/pl = 1 97-2 11, eb/pb = 1 14-1.21; clypeus – ew/ed ca 4.0; antenna – al/apl ca 0 89, al/was3 ca 16 0, as3/as2 ca. 2.1; maxillary palp – mp/as3 ca 1.4; scutellum – pkp/st ca. 5.6; metasternum – cavl/metl ca. 2 1, metepisternum – ml/mw ca 3 1; legs – tars1/2 ca. 1.8, ftibl/ftibw ca. 3.8, dtk/dod ca 2 6, ffeml/ffemw ca 3.3; abdomen – pav/pm ca. 2.1.

Diagnostic characters
Head Circumocular depression shallow; anterior margin of mentum straight (fig. 171); underside of the head wih transverse concavity (fig 172), antenna as in fig. 173.

Pronotal sides subparallel 4/5 from base (fig 174); anterior angles slightly protruding frontwards (pl/lapa ca. 15.0), lateral border moderately wide (bp/lbp ca. 32)

Elytra, humeral angles strongly produced outwards (fig. 175).

Prosternum evenly convex, prosternal process slightly depressed in the middle (fig. 176)

Male legs Tarsi as in figs 177-179 (females: figs 180-182); fore tibia with deep concavity 1/3 from the apex (figs 183-184); mid tibia with two denticles inside (figs 185-186); hind tibiae straight and bare (fig. 187); hind femur with denticle inside (fig. 188).

Genitalia
Female (figs 189 190): lfb/lo ca. 5.6, paraproct equal to coxites p/c = 1.0; coxites triangular (tc/2bc1 ca 0.9), first coxite moderately wide (bc1/lc1 = 2.0-2 2) and long (c1/c2 = 0.8-0.9), c3/c3-c4 ca. 3.0, c4-c3/c1 ca. 0.1.

Male (fig. 191): apical part simple; lmb/la ca. 5.9, lbp/lap ca 2.0.

Sexual dimorphism
Male body more slender than female (male el/eb = 1.38-1.43, female el/eb = 1 28-1.36).

Legs structure as in figs. 177-188.

Distribution (map 11)
MADAGASCAR EST: – Massif de l'Andohahelo, 1954 (*R. PAULIAN*)

Biology
Period of adult appearance. I, IV, V.

Habitat: Chaînes Anosyennes, altitude: 1,770-1,950 m, 1,800 m, 2,800 m.

Source : MNHN, Paris

Genus *Madobalus* Fairmaire, 1901

Madobalus Fairmaire, 1901: 73. – Gebien, 1910. 307, 1938 291; Iwan, 1996: 400, 2002a 74, 2002b: 274

Genus type species
Madobalus rotundicollis Fairmaire, 1901, by monotypy

Systematic position
Madobalus belongs to the melanocratoid group. The genus forms a separate clade together with its sister group *Melanocratus*. The following characters defined the group: pronotum with basal and anterior margins widened medially; fore tibia with apical denticle strongly produced outwards; male mid tibia distinctly widened apically.

Madobalus differs from the above-mentioned genera by strongly elongated hind tarsi and antenna (al/apl ca 0 90, al/was3 ca. 15.0-19.0, as3/as2 ca. 3 5), and structure of aedeagus

Species composition
Monotypic genus, with single species (*rotundicollis*)

Distribution (map 11)
Malagasy endemic

Madobalus rotundicollis Fairmaire, 1901
(Pl. 11, figs 192-211; pl 33, figs 551-552, map 11)

Madobalus rotundicollis Fairmaire, 1901: 73. Gebien, 1910· 307; 1938 291; Iwan, 1996: 401, 2002a: 75, 2002b: 275.

Lectotype
Male, designated by Iwan (1996), "Muséum Paris, 1906 Coll. Léon Fairmaire/Type/*Madobalus rotundicollis*, Madagascar/Plateau de l'Androy-Rég. d'Ambovombe" (MNHN).

Paralectotypes
Designated by Iwan (1996). "Muséum Paris, 1906 Coll Léon Fairmaire/Type/*Madobalus rotundicollis*, Madagascar/Plateau de l'Androy-Rég d'Ambovombe", 1 ♀ (MNHN), "Muséum Paris, 1906 Coll. Léon Fairmaire/Muséum Paris, Madagascar, Androy, Manambovo, Dr J Decorse 1901/15 au 30 janv 01/*Madobalus rotundicollis*", 1 ♂ (MNHN); "*Madobalus rotundicollis*, Cotype/Plateau de l'Androy Rég. d'Ambovombe", 1 ♂ (MGFT).

Measurements
Body length 15.0-19 0, pl/pb = 0.59-0.63, el/eb = 1.36-1.49, el/pl = 2.44-2.67, eb/pb = 1 06-1.16

Diagnostic characters
Head (fig 192) Clypeus with deep and wide emargination (ew/ed = 2 6-2 8), genal canthus equal to eyes, circumocular depression absent, eye narrowed laterally (between tempus and genal canthus 5 ommatidia visible). Antenna moderately long (al/apl ca 0 9) and slender (al/was3 = 15 0-19.0), 3rd antennomere short (as3/as2 ca. 3 5), distal segments

Source : MNHN, Paris

(antennomeres 7-11) evenly widened (fig. 193). Mentum elongated, with short lateral wings, mid part short and narrowed anteriorly, median keel short (fig. 194); submentum triangular with slightly elongated base. Last segment of maxillary palp moderately wide (mp/as3 = 0.7-1 0).

Pronotal sides rounded (fig. 195); hypomeron evenly convex, smooth; anterior angles distinctly protruding frontwards (pl/lapa = 7.8-8.4), posterior angles right, protruding beyond the middle of base; base almost straight; border of anterior and posterior margins complete, widened in middle, lateral border moderately wide (bp/lbp ca. 40), of even width along its whole length.

Scutellum narrow at base (pkp/st ca. 2.5), depressed below the plane of elytra (fig. 196).

Elytron of 9 rows (striae punctate sulcate) connected as follows· 1 9, 2-7, 3-6, 4 5, 8-free; intervals almost flat and smooth (punctures invisible); elytral sides rounded, tucked in posteriorly (part of VIII and IX intervals visible form underside); elytral callus rounded, not protruding outwards; anterior margin (base) bisinuate and unbordered, upper edge convex medially (disappearing just before humeri); epipleuron flat and evenly narrowing towards apex, outer margin straight, inner margin of apical part unbordered and almost rounded at apex (fig. 197).

Prosternum evenly convex, with narrow border of anterior margin; prosternal process protruding towards mesosternum, bordering wide and disappearing at apex (fig. 198)

Wings entirely reduced.

Metasternum between insertions of mid and hind coxae moderately short (cavl/metl ca. 2.3).

Metepisternum rectangular and long (ml/mw ca. 3.1).

Legs, male fore and mid tarsi strongly widened, all tarsi with pubescence on underside, glossy median groove present on tarsomeres as follows: male: fore and mid – 4, hind – 1-3 tarsomeres (figs 199-201), female fore and mid – 1-4, hind – 1-3 tarsomeres, hind tarsi long (tars1/2 ca. 2.6); fore tibia in both sexes widened towards apex (ftibl/ftibw = 2.4-2.8), outer apical denticle sharp and strongly produced outwards (figs 202-204), outer margin of fore and mid tibiae simple (figs 205-206); all male tibiae widened, inner margin setose at apex, inner spur of hind tibia moderately long (dtk/dod ca. 1.9) (figs 207-208); fore femur distinctly widened (ffeml/ffemw ca. 3.6).

Abdomen, bordering of the last ventrite absent; process of I abdominal ventrite wide (pav/pm ca. 2.0).

Genitalia

Female (figs 209-210): lfb/lo ca. 8.8, paraproct equal to coxites (p/c ca 1 0); coxites triangular (tc/2bc1 ca. 0.8), first coxite wide (bc1/lc1 ca 3 1) and long (c1/c2 ca. 0 9), (c3/c3-c4 ca 3 4), (c4-c3/c1 ca 0 4), gonostylus present, bursa copulatrix without sclerite; spermatheca branched from the base, with narrow ducts, spermathecal accessory gland present.

Male (fig. 211): lmb/la ca. 6.1, lbp/lap ca 3.0.

Sexual dimorphism

Male body more slender than in female (male. el/eb = 1 41-1 49, female el/eb = 1 36-1 40).

Male (figs 199-201, 203-208): all tarsi widened, inner side of tibiae and femora with specific structures

Female. anterior tarsi and tibiae simple.

Dar jsz ÑAÑ
Source · MNHN, Paris

Distribution (map 11)

MADAGASCAR SUD – Beloha, District de Tsihombe, 1919 (*Lieutenant* DECARY). – Beloha, 1948 (*P. A* ROBINSON). – Faux-Cap, Ambovombe Distr. – Marovato, Ambovombe Distr., 1956 (*C.* KOCH). – Plateau de l'Androy, Rég. d'Ambovombe. – Androy, fleuve Manambovo, 1901 (*J.* DECORSE).

Biology

Period of adult appearance: I

Genus *Melanocratus* Fairmaire, 1895

Melanocratus Fairmaire, 1895. 21. – Gebien, 1910: 307, 1938: 411, Iwan, 1996. 404, 2002a: 75, 2002b: 275.

Genus type species

Melanocratus validipes Fairmaire, 1895; by monotypy.

Systematic position

Melanocratus with its sister group *Sebastianus*, forms a clade defined by the following characters: short antenna, epipleuron widened at the level of 3-4 abdominal ventrites (unique character within Platynotini), outer margin of mid tibia with 2 ridges, inner spur of hind tibia very short.

Melanocratus differs from *Sebastianus* in having "hammer-like" male mid tibia and moderately wide first plate of coxite

Measurements

Body length 13.5-20.5 mm, pl/pb = 0.64-0.77, el/eb = 1.24-1.51, el/pl = 1.83-2.29, eb/pb = 0.95-1.13.

Diagnostic characters

Head with depressions near clypeus, frons and genae; clypeus with deep and wide emargination (ew/ed = 3.0-4.0); genal canthus wider than eye; eye between tempus and genal canthus wide (over 5 ommatidia visible), circumocular depression present; antenna short (al/apl = 0.7-0.8) and moderately wide (al/was3 = 13.0-13.5), 3rd antennomere moderately long (as3/as2 = 2.6-3.2), distal segments (antennomeres 7-11) evenly widened, transverse. Mentum with short lateral wings, mid part short, median keel narrow and shortened; submentum triangular with slightly elongated base. Last segment of maxillary palp narrow (mp/as3 = 1.0-1.1)

Pronotum with rounded sides; pronotal hypomeron evenly convex and smooth, with narrow longitudinal depressions laterally; anterior angles slightly or moderately protruding frontwards (pl/lapa = 7.0-12), posterior angles right, not or slightly protruding beyond the middle of base; base slightly doubly sinuately emarginate, border of anterior and basal margins complete and widened medially, lateral border moderately wide (bp/lbp = 34-44), of even width along its whole length.

Scutellum moderately wide (pkp/st = 2.8-4.6), depressed below the plane of elytra.

Elytron of 9 rows (striae punctate-sulcate or sulcate) connected as follows: 1-9, 2-7, 3-6, 4-5, 8 free; elytral sides slightly rounded and moderately tucked in posteriorly (part of VIII and IX intervals visible from underside); anterior margin (base) bisinuate and unbordered, upper edge convex medially (disappearing just before humeri), base of elytra at the sides

Source : MNHN, Paris

of scutellum not depressed; epipleuron flat and widened at the level of 3-4 abdominal ventrites, inner margin of apical part unbordered and rounded at apex.

Prosternum with narrow border of anterior margin; prosternal process protruding towards mesosternum or blunt, arcuate, bordering wide and disappearing at apex.

Wings entirely reduced.

Metasternum between insertions of mid and hind coxae short (cavl/metl = 1.6-2.2).

Metepisternum rectangular and moderately long (ml/mw = 3.1-3.9).

Legs, male fore tarsi widened, all tarsi with pubescence on underside, glossy median groove present on tarsomeres as follows: female – all, male – specific scheme for each species; hind tarsi moderately long (tars1/2 = 2.2-2.5); fore tibia widened towards apex (ftibl/ftibw = 2.5-4 0) (in female more robust), outer apical denticle sharp and strongly produced outwards, outer margin of mid female tibia with 2 ridges (in male smooth), male mid tibia hammer-like, inner spur of hind tibia short (dtk/dod = 3 5-4.0), fore femur distinctly widened (ffeml/ffemw = 3.6-4.1)

Abdominal ventrites (in male) with tubercles, bordering of the last abdominal ventrite absent; process of I abdominal ventrite wide (pav/pm = 1.8-2.6).

Genitalia

Female. lfb/lo = 5.5-8.0, paraproct slightly longer than coxites p/c = 1 1; coxites triangular (tc/2bc1 = 0.7-0.8), first plate moderately wide (bc1/lc1 = 2.5-3 3) and moderately long (c1/c2 = 1.0-1.5), (c3/c3-c4 = 3.8-5.3), (c4-c3/c1 = 0 1-0.2), gonostylus present; bursa copulatrix with no sclerite, spermatheca branched from the base, with narrow ducts, spermathecal accessory gland present.

Male. lmb/la = 6.7-8.7, lbp/lap = 2.2-2.3.

Sexual dimorphism

Male body more slender than female; male abdominal ventrites 1-2 convex in the middle.

Male: fore tarsi widened, fore tibia slender, inner side of tibiae and femora with structures specific for each species

Female. anterior tarsi and tibiae simple (fore tibia robust).

Species composition

The genus composed of the following species: *validipes*, *ferreri* and *fairmairei*

Distribution (map 12)

Malagasy endemic.

Clé d'identification des espèces

1. Apex des élytres jointifs (pl. 12, fig 232) ; fémur postérieur du mâle simple **2**

— Apex des élytres divergents (pl. 13, fig. 248) ; fémur postérieur du mâle avec une cavité sur la face interne (pl 14, fig. 259) . . . . . ***validipes*** Fairmaire

2. Corps svelte (el/eb = 1,42-1,49) ; pronotum du mâle subtrapézoïdal, plus large antérieurement et plus étroit vers la base (pl. 12, fig. 231) ; disque du pronotum légèrement convexe près du bord latéral ; prosternum avec une convexité longitudinale (pl. 12, fig. 233, 234) . . . . . ***ferreri*** Iwan

Source : MNHN, Paris

— Corps robuste (el/eb = 1,24-1,29) ; pronotum du mâle avec les côtés arrondis (pl. 12, fig 214) ; disque du pronotum avec une étroite rainure longitudinale près du bord latéral ; prosternum légèrement convexe .... ***fairmairei*** Iwan

Identification key for the species

1. Elytral apices contacting (pl. 12, fig. 232); male hind femora simple **2**

— Elytra diverge just before apex (pl 13, fig. 248); male hind femora with a concavity on the inner side (pl. 14, fig. 259) .... ***validipes*** Fairmaire

2. Body slender (el/eb = 1 42-1.49), male pronotum subtrapezoid, widest anteriorly and narrowing towards base (pl. 12, fig. 231), pronotal disc evenly convex near lateral border, prosternum with longitudinal convexity (pl. 12, figs 233, 234) .... ***ferreri*** Iwan

— Body robust (el/eb = 1.24 1.29); male pronotum with sides rounded (pl 12, fig. 214); pronotal disc with longitudinal narrow groove near lateral border; prosternum evenly convex .... ***fairmairei*** Iwan

Melanocratus fairmairei Iwan, 1996

(Pl. 12, figs 212-228; pl. 34, fig. 553, map 12)

Melanocratus fairmairei Iwan, 1996. 411. – Iwan, 2002a 76, 2002b: 275.

Holotype

Male, "Madagascar, I. 1956, C. Koch *leg* Itampolo, Ampanihy Distr." (HNHM).

Paratypes

"Muséum Paris, Madagascar, Prov de Tuléar, G. Petit, 1926", 1 ♂, 3 ♀♀ (MNHN); "Institut scientifique Madagascar/lac Tsimanampetsotsa, V 51, (R Paulian).", 1 ♂ (MNHN), 2 ♂♂, 1 ♀ (HNHM); "Muséum Paris, coll P. Ardoin, 1978/*Melanocratus validipes* Fairm. P. Ardoin *det* 1966/19.V.1965 Itampolo, (bush) S-W Madagascar, L. Bigot *leg* ", 1 ♂ (MNHN), "validipes Fairm. *det* Kaszab/Madagascar I. 1956, C. Koch *leg* /Itampolo, Ampanihy Distr.", 1 ♀ (HNHM), "Muséum Paris, Madagascar, Ikongo, G. Grandidier 1902", 1 ♀ (MNHN); "*Melanocratus validipes* Fairm. *det.* Endrody-Younga/Madagascar, I. 1956 C Koch *leg.*/Itampolo, Ampanihy Distr.", 4 ♂♂, 5 ♀♀ (HNHM); "Institut scientifique Madagascar/Tongobory Sept-Lacs A.R.", 2 ♀♀ (HNHM).

Measurements

Body length 13 5 17.5 mm, pl/pb = 0 64-0.76, el/eb = 1.24-1 29, el/pl = 1 83-2.29, eb/pb = 1 06-1 13; clypeus – ew/ed ca. 3.7, antenna – al/apl ca 0.7, al/was3 ca. 13 5, as3/as2 ca 3 3, maxillary palp – mp/as3 ca 1 1; scutellum – pkp/st ca. 4 6; metasternum – cavl/metl ca. 1.6; metepisternum – ml/mw ca. 3.9, legs – tars1/2 ca 2.4, ftibl/ftibw ca. 2 5, dtk/dod ca 3.5, ffeml/ffemw ca 4.0; abdomen – pav/pm ca. 2.6

Diagnostic characters

Head as in fig. 212; punctation indistinct, blurred; circumocular depression distinct, mid part of mentum strongly narrowing anteriorly, with convex, sharp keel (fig 213).

Source : MNHN, Paris

Pronotum with rounded sides (in both sexes) (fig 214), anterior angles distinctly protruding frontwards (pl/lapa ca. 7.0), lateral border moderately wide (bp/lbp ca 34); pronotal disc with narrow, longitudinal depressions situated at lateral margins and base (with large punctures).

Elytra contacting from scutellum to apex, rows with large, deep punctures; intervals distinctly convex, shiny (fig. 215).

Prosterum evenly convex, prosternal process blunt, bordering wide and disappearing at apex (fig. 216).

Mesosternal process with deep median groove (fig 217).

Male legs. Fore tarsi widened, all tarsomeres with pubescence on underside, glossy median groove present on all tarsomeres (the same in female); fore tibia narrow, strongly widened at apex, outer margin smooth (with small denticles in female) (figs 218-220); mid tibia widened at 1/3 from base, outer margin with two sharp ridges (figs 221-222); hind tibia bent, with incisions inside (figs 223-224); hind femora simple

Male abdominal ventrites with longitudinal wrinkles, 1st and 2nd elevated in the middle.

Genitalia

Female (fig. 225): lfb/lo ca. 8.0, paraproct slightly longer than coxites p/c = 1.1; coxites triangular (tc/2bc1 ca 0.7), first plate moderately wide (bc1/lc1 ca 3 3) and long (c1/c2 ca. 1.0), (c3/c3-c4 ca 3 8), (c4-c3/c1 ca. 0.1),

Male (figs 226-228): lmb/la ca. 8.7, lbp/lap ca. 2.2.

Sexual dimorphism

Male: body more slender – el/eb = 1.28-1 29; abdominal ventrite 1st and 2nd elevated in the middle

Female. body more robust – el/eb = 1 24-1.28; abdominal ventrite 1st and 2nd flat

Structure of legs as in figs 218-224.

Distribution (map 12)

MADAGASCAR SUD: – Itampolo, Ampanihy Distr , 1956 (*C. KOCH*). – Prov. de Tuléar [= Toliara], 1926 (*G. PETIT*) – Itampolo, 1965 (*L. BIGOT*) – Itampolo, Ampanihy Distr., 1956 (*C KOCH*). – Lac Tsimanampetsotsa, 1951 (*R. PAULIAN*) – Tsimanampetsotsa, 1991 (*L. BARTOLOZZI, S. TAITI* et *C. RAHARIMINA*). – Sept Lacs, Tongobory (*P. A. ROBINSON*).

Biology

Period of adult appearance: I, V.

Habitat: "bush".

Melanocratus ferreri Iwan, 1996

(Pl. 12, 13, figs 229-244; pl. 28, fig 531; pl. 34, fig. 554, map 12)

Melanocratus ferreri Iwan, 1996: 408 – Ferrer, 1998: 358; Iwan, 2002a 76, 2002b. 275.

Holotype

Male, "Madagascar I 1956 C Koch *leg* /Androka, Ampanihy Distr." (HNHM)

Source : MNHN, Paris

Paratypes

"I 1956 C Koch *leg.*/Ambovombe, s. Madagascar", 1 ♀ (HNHM); "15 au 30 nov (19)00; Muséum Paris, Madagascar, Région de l'Androy, Ambovombe, Dr J. Decorse 1901", 1 ♀ (MNHN); "1 au 15 sept (19)00/Muséum Paris, Madagascar, Région de l'Androy, Ambovombe, Dr J. Decorse 1901", 1 ♂, 1 ♀ (MNHN), "Muséum Paris, Madagascar, A. Grandidier 1867", 1 ♀ (MNHN), "Muséum Paris, Madagascar, Prov de Tuléar, Androka, Lieut. Gaudron 1913", 1 ♂ (MNHN); "Plateau de l'Androy - Rég. d'Ambovombe/Muséum Paris 1906 Coll. Léon Fairmaire", 1 ♂(MNHN); "Muséum Paris 1906 Coll. Léon Fairmaire/15 au 31 mars 01, 1 ♂ (MNHN), Muséum Paris, Madagascar, Région de l'Androy, Ambovombe, Dr J. Decorse, 1901", 1 ♂ (MNHN); "Madagascar, I. 1956, C Koch *leg* /Marovato, Ambovombe Distr", 7 ♂, 2 ♀♀ (HNHM), 2 ♂♂ (HNHM), "Muséum Paris, coll Ch Alluaud/Madagascar Sud, Pays Androy Sud, Alluaud 1900 43", 1 ♂ (MNHN); "Madagascar, I 1956 C Koch *leg.*/Cap Ste. Marie, Ambovombe Dist.", 1 ♀ (HNHM), "Inst. scient Madagascar, Beloha, 5 VIII. 48, A R", 1 ♂ (MNHN), 5 ♀♀ (HNHM), "16 km. NE of Androka", 1 ♀ (HNHM); "Ambovombe, Tsihombe", 1 ♂ (HNHM), "lac Tsimanampetsotsa, V-51 R.P/Institut scientifique Madagascar", 2 ♀♀ (HNHM); "Madagascar, I. 1956 C Koch *leg* , SW. of Itrobiky, Ampanihy Distr.", 1 ♂, 1 ♀ (HNHM); "Muséum Paris, Madagascar S , Beloha, district de Tsihombe, Lieut Decary 1919/Avril", 1 ♂, 2 ♀♀ (MNHN); "Madagascar I 1956, C Koch *leg* /Ambovombe, S. Madagascar", 2 ♂♂ (HNHM); "Madagascar I. 1956 C Koch *leg* /Androka, Ampanihy Distr.", 1 ♂ (HNHM); "Amboasary Sud, Berenty, Madagascar, I. 1981, A Peyrieras", 2 ♂♂, 1 ♀ (JFC).

Measurements

Body length 14.5-18.0 mm, pl/pb = 0 67-0.72, el/eb = 1.42-1 49, el/pl = 2 09-2.29, eb/pb = 0 95-1.10; clypeus – ew/ed ca 4 0; antenna – al/apl ca. 0 8, al/was3 ca. 13 0, as3/as2 ca 2.8; maxillary palp – mp/as3 ca. 1.1; scutellum – pkp/st ca. 2.9; metasternum – cavl/metl ca. 2 2, metepisternum – ml/mw ca. 3.1; legs – tars1/2 ca. 2.5, ftibl/ftibw ca. 4.0, dtk/dod ca 4 0, ffeml/ffemw ca 4 1; abdomen – pav/pm ca 1.9.

Diagnostic characters

Head with distinct punctation; circumocular depression shallow; mid part of mentum wide, with strongly convex, obtuse keel (fig. 229), antenna as in fig. 230.

Pronotal sides rounded, in male widest at 3/4 from base (cordiform) (fig. 231), pronotum wider than elytra in male (eb/pb = 0 95-0 98), narrower in female (eb/pb = 1.06-1.10); anterior angles obtuse, moderately protruding frontwards (pl/lapa ca. 8 8); lateral border moderately wide (bp/lbp ca 39); disc evenly convex.

Elytra contacting from scutellum to apex (fig 232), rows with small, shallow punctures, intervals moderately convex

Prosterum with longitudinal convexity (fig 233); prosternal process protruding towards mesosternum, bordering wide and disappearing at apex (fig. 234).

Mesosternal process with deep median groove

Male legs. Male fore tarsi slightly widened (narrow in female) (figs 235-236); all tarsomeres with pubescence on underside, glossy median groove present on all tarsomeres (the same in female), fore tibia narrow, strongly widened at apex, outer margin smooth (figs 237-238), female's as in fig. 239; mid tibia widened at 1/3 from base, outer margin with two obtuse ridges (figs 240-241), hind femora simple.

Male abdominal ventrites with longitudinal wrinkles, 1st elevated in the middle (fig. 243)

Source : MNHN, Paris

Genitalia

Female (fig. 244): lfb/lo ca. 5.5, paraproct slightly longer than coxites p/c = 1.1; coxites triangular (tc/2bc1 ca. 0.8), (bc1/lc1 ca. 2.5), (c1/c2 ca. 1.5), (c3/c3-c4 ca. 4.8), (c4-c3/c1 ca. 0.2).

Male: lmb/la ca. 6.9, lbp/lap ca. 2.3.

Sexual dimorphism

Male: body more slender – el/eb = 1.48-1.49; abdominal ventrite 1st elevated in the middle.

Female: body more robust – el/eb = 1.42-1.48; abdominal ventrite 1st flat.

Structure of legs as in figs 235-242.

Distribution (map 12)

MADAGASCAR SUD: – Androka, Prov. de Tuléar [= Toliara], 1913 (*Lieutenant* GAUDRON). – Androka, Ampanihy Distr., 1956 (*C. KOCH*). – 16 km NE of Androka. – Ambovombe, Région de l'Androy, 1901 (*J. DECORSE*). – Ambovombe, 1956 (*C. KOCH*). – Pays Androy Sud, 1900 (*CH. ALLUAUD*). – Beloha, District de Tsihombe, 1919 (*Lieutenant* DECARY). – Beloha, 1948 (*P. A. ROBINSON*). – Berenty, Amboasary Sud, 1981 (*A. PEYRIERAS*). – Cap Sainte Marie, Ambovombe Dist., 1956 (*C. KOCH*). – SW of Itrobiky, Ampanihy Distr., 1956 (*C. KOCH*). – Tsihombe. – Lac Tsimanampetsotsa, 1951 (*R. PAULIAN*).

Biology

Period of adult appearance: I, III, IV, VIII, IX, XI.

Melanocratus validipes Fairmaire, 1895

(Pl. 13, 14, figs 245-262 ; pl. 29, fig. 532; pl. 34, fig. 555, map 12)

Melanocratus validipes Fairmaire, 1895: 22. – Champion, 1895: 110; Gebien, 1910: 307, 1938: 411, Ardoin, 1969b: 462; Iwan, 1996: 406, 2002a: 76, 2002b: 275.

Styphacus humerosus Fairmaire, 1901: 72, syn. by Iwan, 1996: 406; Ferrer, 1998: 358.

Types

Melanocratus validipes Fairmaire, 1895

– Holotype. Male, "Muséum Paris, 1906 Coll. Léon Fairmaire/décrit dans *Ann. Soc. ent. Belg.* 1895, p. 22. Holotype/Madagascar Sud, Pays Mahafaly S.T. Last. 1893/ *Melanocratus validipes* Fairm. – n. g. n. sp. Madag." (MNHN)

Styphacus humerosus Fairmaire, 1901

– Holotype. Male, "Muséum Paris, 1906 Coll. Léon Fairmaire/Plateau de l'Androy. Rég. d'Ambovombe/Type/*Styphacus humerosus* Fairm., Madag." (MNHN)

Measurements

Body length 17.0-20.5 mm, pl/pb = 0.71-0.77, el/eb = 1.41-1.51, el/pl = 1.90-2.16, eb/pb = 1.02-1.06, clypeus – ew/ed ca. 3.0; antenna – al/apl ca. 0.7, al/was3 ca. 13.5, as3/as2 ca. 2.6, maxillary palp – mp/as3 ca. 1.0; scutellum – pkp/st ca. 2.8; metasternum – cavl/metl ca. 1.9, metepisternum – ml/mw ca. 3.6, legs – tars1/2 ca. 2.2, ftibl/ftibw ca. 3.0, dtk/dod ca. 3.7, ffeml/ffemw ca. 3.6; abdomen – pav/pm ca. 1.8.

Source : MNHN, Paris

Diagnostic characters

Head (fig 245), punctation distinct, circumocular depression shallow; mid part of mentum wide, with strongly convex, obtuse keel.

Pronotal sides rounded (in both sexes) (fig. 246); anterior angles obtuse, slightly protruding frontwards (pl/lapa ca. 12 0), (pl/lapa ca. 8.8), lateral border moderately wide (bp/lbp ca. 44), slightly narrowed in the middle; disc evenly convex.

Anterior elytral margin as in fig. 247; elytra diverge just before apex (fig 248); rows with well visible punctures; intervals moderately convex.

Prosternum evenly convex (figs 249-250); prosternal process blunt, bordering wide and disappearing at apex.

Mesosternal process with deep median groove (fig 251).

Male legs. Male fore tarsi slightly widened (narrow in female) (figs 235-236); all tarsomeres with pubescence on underside, glossy median groove present on all tarsomeres (except 1 3 tarsomeres of fore tarsi), fore tibia arcuate, with longitudinal ridge inside, outer margin smooth (figs 252-253), female tibia as in fig. 254, mid tibia with 2 obtuse ridges on outer margin (figs 255-256); hind tibia bent inside (figs 257-258); hind femora with denticle at 2/3 from base (fig. 259)

Male abdominal ventrites with longitudinal wrinkles, 1st ventrite with longitudinal elevation in the middle (fig 260).

Genitalia

Female (figs 261-262): lfb/lo ca 6 0, paraproct slightly longer than coxites p/c = 1 1; coxites triangular (tc/2bc1 ca. 0.7), (bc1/lc1 ca 3.0), (c1/c2 ca 1 1), (c3/c3-c4 ca 5 3), (c4-c3/c1 ca. 0 2),

Male: lmb/la ca. 6.7, lbp/lap ca. 2 2.

Sexual dimorphism

Male: body more slender – el/eb = 1.45-1.51; abdominal ventrite 1 elevated in the middle.

Female: body more robust – el/eb = 1.41- 1.49; abdominal ventrite 1 flat.

Structure of legs as in figs 252-259.

Distribution (map 12)

MADAGASCAR EST: – Midongy, Prov de Farafangana (today, Prov. de Midongy du sud), 1926 (*R. DECARY*) – Andrahomana 1900 (*CH. ALLUAUD*).

MADAGASCAR SUD. – Amboasary, près d'Ambovombe, 1967 (*J VADON/A. PEYRIERAS*). Ambovombe, Région de l'Androy, 1901 (*J DECORSE*) – 16 km N. E. of Androka, Antanimora, Ambovombe Distr. ; 1956 (*C. KOCH*). – Beloha. – Imanombo, 190 (*J DECORSE*). – Plateau Mahafaly, 11/12 km à l'ouest d'Ankalirano, 1974 (*P VIETTE/ A. PEYRIERAS*) – S E. de Tranomaro, Androatsabo, 1971 (*A PEYRIERAS*) – Tranomaro, Androy, 1948 (*R. PAULIAN*). – Itampolo, 1965 (*L. BIGOT*).

Biology

Period of adult appearance: I, II, III, V, VI, VIII, XI, XII.

Habitat: "forêt sèche"; altitude: 250 m, 400 m, 600-1,000 m.

Source : MNHN, Paris

Genus *Pokryszkiella* Iwan, 1996

Pokryszkiella Iwan, 1996: 414. – 2002a: 91, 2002b: 291

Genus type species
Pokryszkiella cornuta Iwan, 1996; designated by monotypy.

Systematic position
Pokryszkiella is the closest related to *Hovademus* (body surface with microtubules, anterior margin of prosternum unbordered). The genus differs from *Hovademus* in the following characters: clypeus with shallow median emargination (reversal), antenna robust, antennomeres 7-11 transverse, hypostoma with process near maxillary articulation, base of scutellum narrow, elytral humeri strongly protruding outwards.

Pokryszkiella displays the following unique characters within Platynotini: clypeus and outer margin of mandible with horns.

Species composition
Monotypic genus with a single species - *cornuta*.

Distribution (map 11)
Malagasy endemic.

Pokryszkiella cornuta Iwan, 1996
(Pl. 14, figs 263-277; pl. 30, fig. 533; pl. 34, fig. 556, map 11)

Pokryszkiella cornuta Iwan, 1996: 415. – Iwan, 2002a: 91, 2002b: 291.

Holotype
Male, "Muséum Paris Coll. P. Ardoin 1978/Institut scientifique Madagascar/2850/ Andohahelo 1,500 m. R.P. (R. Paulian)/217" (MNHN).

Paratypes
"Institut scientifique Madagascar/Andohahelo 1,500 m. R. P.", 4 ♀♀ (HNHM).

Measurements
Body length 17.0-21.0, pl/pb = 0.67-0.70, el/eb = 1.36-1.42, el/pl = 2.11-2.46, eb/pb = 1.07-1.15.

Diagnostic characters
Head (figs 263-264). Clypeus with 2 horns (shortened in female), between them shallow and wide emargination (ed/ew ca. 6.0); genal canthus slightly wider than eyes; eye laterally narrowed, between tempus and gena 5 ommatidia visible; circumocular depression absent; antenna moderately long (al/apl ca. 0.9) and robust (al/was3 ca. 10.0-12.0), 3rd antennomere long (as3/as2 ca. 2.6), antennomeres 7-11 evenly widened, transverse (fig. 265); mentum with short lateral wings, mid part short and wide, median keel wide (fig. 266); submentum small, triangular with slightly elongated base; last segment of maxillary palp moderately wide (mp/as3 = 0.7-1.0). Outer margin of mandible with long horn (in male) or tubercle (in female). Hypostoma near maxillary articulation with process, transverse groove situated before strydulatory gula.

Source : MNHN, Paris

Pronotum with rounded sides, subparallel basally (fig. 267); pronotal hypomeron evenly convex and smooth (punctures practically invisible), anterior angles moderately protruding frontwards (pl/lapa ca 13 0), posterior angles right, not protruding beyond the middle of base; base distinctly bisinuate; border of anterior and posterior margins interrupted in middle, lateral border moderately wide (bp/lbp ca 36), of even width along its whole length anterior to posterior angles

Scutellum narrow (pkp/st ca. 4.1), depressed below the plane of elytra.

Elytra with 9 rows (striae punctate-sulcate) connected as follows: 1-9, 2-7, 3-6, 4-5, 8-free; intervals with microtubules, punctures invisible; elytra strongly tucked in posteriorly (interval IX and a part of VIII visible from underside); anterior margin (base) bisinuate and unbordered, upper edge convex medially (disappearing just before humeri), elytral humeri rounded and protruding outwards, situated below or at the level of scutellum; base of elytra laterad of scutellum not depressed, epipleuron flat and evenly narrowing towards apex, outer margin straight, inner margin of apical part unbordered and rounded at apex (fig. 268).

Prosternum evenly convex, anterior margin with wide border disappearing in the middle; prosternal process protruding towards mesosternum, bordering wide and entire at apex (fig. 269).

Wings entirely reduced.

Metasternum between insertions of mid and hind coxae moderately short (cavl/metl ca 2 1)

Metepisternum rectangular and long (ml/mw ca. 3.3) (fig. 270).

Legs. Male fore and mid tarsi strongly widened, all tarsi with pubescence on underside, glossy median groove present on tarsomeres as follows, female. fore and mid – 2-4, hind – 2-3 tarsomeres, male. fore and mid – 4, hind 2-3 tarsomeres; hind tarsi moderately long (tars1/2 ca 2.3), fore tibia in both sexes widened towards apex (ftibl/ftibw = 3 5-3 7), outer apical denticle straight, outer margin of fore and mid tibia simple (figs 271-272), female as in 273; male mid tibia widened (figs 274-275); inner spur of hind tibia moderately long (dtk/dod ca. 2.3); fore femur moderately widened (ffeml/ffemw ca 3.3).

Abdominal ventrites (in male) smooth, bordering of the last abdominal ventrite absent; process of I abdominal ventrite wide (pav/pm ca. 2.0).

Genitalia

Female *genitalia*, lfb/lo ca 6.6-6.9, paraproct longer than coxites (lp/tc = 1.2), coxites triangular (tc/2bc1 ca. 0.9), first plate moderately wide (bc1/lc1 ca 2 3) and long (lc1/lc2 ca. 0 8), distance between bases of plates three and four long (lc3/lc3-lc4 ca 2.9), fourth plate longitudinal, its apical free part very short (lc1/lc4 lc3 ca 0 10), gonostylus present, bursa copulatrix with no sclerite, spermatheca branched from the base, with narrow ducts, spermathecal accessory gland present.

Sexual dimorphism

Horns on the head – in male more robust than in female (figs 263-264); structure of the legs (figs 271-275).

Distribution (map 11)

MADAGASCAR CENTRE/DOMAINE DES HAUTES MONTAGNES: Massif de l'Andohahelo [National Park] (*R. PAULIAN*)

Biology

Habitat: altitude: 1,500 m

Source MNHN, Paris

Genus *Sebastianus* Iwan, 1996

Sebastianus Iwan, 1996. 416 – Iwan, 1999. 381, 2002a: 98, 2002b. 300

Genus type species
Melanocratus major Fairmaire, 1899, *original designation*

Systematic position
Sebastianus is the closest related to *Doyenus* and *Styphacus*, the genera belong to a single clade based on the following characters: elytral base bordered (except *S. kochi*); female fore tibia with two, apical and median, denticles; outer margin of mid tibia with denticles, hind tibia with 2 ridges situated dorsally; short first plate of coxite

Sebastianus differs from the above-mentioned genera in the male mid tibia (slightly emarginate inside), the paraproct (equal to or shorter than coxites), lateral pronotal border and abdomen.

Measurements
Body length 15 0-29.0 mm, pl/pb = 0.57-0.70, el/eb = 1.19-1.50, el/pl = 2.13-2.75, eb/pb = 1.02-1.20.

Diagnostic characters
Head elongated, with shallow depressions near clypeus, frons and genae; clypeus with wide and deep emargination (ew/ed = 2.5-3.1), genal canthus equal to or slightly wider than eyes, eye laterally narrowed (between tempus and genal canthus 2-4 ommatidia visible), circumocular depression absent; fronto-clypeal suture disappeared Antenna short (al/apl = 0.6-0 7) and moderately robust (al/was3 = 10 6-15.0), 3rd antennomere moderately short (as3/as2 = 2 6 4.0), distal segments (antennomeres 7-11) evenly widened, transverse. Mentum with short lateral wings, mid part short and narrowing anteriorly, median keel narrow; submentum triangular with slightly elongated base. Last segment of maxillary palp narrow (mp/as3 = 0.9-1.1)

Pronotum with slightly rounded sides, pronotal hypomeron evenly convex and smooth (punctures practically invisible), sometimes depressed near lateral margins; anterior angles slightly to distinctly protruding frontwards (pl/lapa = 6.5-18.8); posterior angles obtuse or right, protruding beyond the middle of base; base slightly doubly sinuately emarginate; border of anterior margin widened medially, lateral border moderately wide (bp/lbp = 25-49), of even width along its whole length anterior to posterior angles, basal border entire (slightly widened in middle).

Scutellum wide (pkp/st = 2 6-3.7), depressed below the plane of elytra.

Elytron of 9 rows (striae punctate-sulcate or sulcate) connected as follows· 1-9, 2-7, 3-6, 4 5, 8-free; intervals moderately convex (sometimes flat), smooth (punctures invisible), elytra strongly tucked in posteriorly (intervals IX and part of VIII visible from underside); anterior margin (base) bisinuate and bordered (reaching humeri), upper edge convex medially (disappearing just before humeri); elytral humeri rounded and not protruding outwards, situated below or at the level of scutellum, base of elytra lateral of scutellum not depressed; epipleuron flat and widened at the level of 3-4 abdominal ventrites, inner margin of apical part unbordered and rounded at apex.

Prosternum evenly convex with narrow border of anterior margin; prosternal process protruding towards mesosternum or blunt (arcuate), bordering wide and disappearing at apex.

Wings entirely reduced.

Dariusz MAN [redacted]
Source · MNHN, Paris

Metasternum between insertions of mid and hind coxae moderately short (cavl/metl = 1.3-1.6)

Metepisternum rectangular and moderately long (ml/mw = 3.7-5.5)

Legs Male fore tarsi widened, all tarsi with pubescence on underside, with glossy median groove (in both sexes); hind tarsi moderately long (tars1/2 = 1.7-2.2), fore tibia (in both sexes) strongly widened towards apex (ftibl/ftibw = 2.5-3.4), outer apical denticle sharp and strongly produced outwards, outer margin of female fore tibia with 2 denticles (apical and median); outer margin of mid tibia with 2 ridges and denticles, male mid tibia straight or slightly widened; inner spur of hind tibia short (dtk/dod = 4.0-6.0), fore femur distinctly widened (ffeml/ffemw = 3.2-4.9), hind male femora simple

Abdominal ventrites with longitudinal wrinkles, with tubercles in males; bordering of the last abdominal ventrite absent, process of abdominal ventrite moderately wide (pav/pm = 1.8-2.3).

Genitalia

Female: lfb/lo = 7.8-12.0, ovipositor: paraproct equal to or shorter than coxites (lp/tc = 0.6-1.0) – paraproct strongly reduced and slightly sclerotized on ventral side,

coxites triangular (tc/2bc1 ca. 0.7), first plate wide (bc1/lc1 = 3.5-4.7) and short (c1/c2 = 0.5-0.6), distance between bases of plates three and four long (c3/c3-c4 = 2.0-3.8), fourth plate longitudinal, its apical free part very short (c4-c3/c1 = 0.05-0.20), gonostylus present; bursa copulatrix with no sclerite, spermatheca branched from the base, with narrow ducts, spermathecal accessory gland present.

Male: lmb/la = 7.5-9.3, lbp/lap = 1.7-2.4

Sexual dimorphism

Male body more slender than female, male abdominal ventrites 1-3 with convexity in the middle

Male: fore tarsi widened, inner side of tibiae with structures specific for each species.

Female: anterior tarsi and tibiae simple (fore tibia distinctly widened).

Species composition

The genus is composed of seven species *endrodyi, madagascariensis, magnus, major, ovoideus projectus* and *simplex*.

Distribution (map 13)

Malagasy endemic

Clé d'identification des espèces

1. Saillie prosternale émoussée ou légèrement convexe à l'apex (pl. 15, fig. 293, 294) ; sternites du mâle 1-3 avec des tubercules, le premier sternite plat (pl. 15, fig. 288, 289) **2**

— Saillie prosternale orientée vers le mésosternum (pl. 15, fig. 279, 280) , sternites du mâle 1 ou 1-2 avec tubercules, le premier sternite convexe au milieu (pl. 17, fig. 330, 331)..... **5**

2. Angles postérieurs du pronotum ne faisant pas saillie vers l'extérieur (pl. 18, fig. 354 ..... **3**

— Angles postérieurs du pronotum faisant saillie vers l'extérieur (pl. 18, fig. 346) **4**

Source : MNHN, Paris

3. Côtés du pronotum arrondis, convexes (pl. 18, fig. 354) ; tibia médian du mâle avec deux carènes dentées sur la face externe (pl 18, fig. 357), tibia postérieur (pl 18, fig 358, 359) , tubercules des sternites du mâle arrondis (pl 18, fig. 360, 361) .... ***simplex*** Iwan

— Côtés du pronotum avec de légères angulations et concavités (pl 17, fig 334, 335) , tibia médian du mâle avec une carène dentée (et une carène effacée) sur la face externe (pl 18, fig 340), tibia postérieur (pl. 18, fig 341, 342) , tubercules des sternites du mâle allongés en forme de quilles (pl 18, fig 343, 344) . . ***ovoideus*** (Fairmaire)

4. Saillie prosternale émoussée ; angles postérieurs du pronotum légèrement saillants (pl. 15, fig. 291) ; sternites du mâle 1-3 (pl. 16, fig. 305, 306) .... ***madagascariensis*** Iwan

— Saillie prosternale légèrement convexe à l'apex , angles postérieurs du pronotum nettement saillants (pl. 18, fig. 346) ; sternites du mâle 1-3 (pl. 18, fig. 352, 353) . . ***projectus*** Iwan

5. Premier sternite du mâle avec tubercule (pl 17, fig 330, 331) , tibia médian du mâle avec deux carènes dentées sur la face externe (pl. 17, fig 329) , tibia postérieur du mâle fortement incurvé (pl. 17, fig. 326, 327) .... ***major*** (Fairmaire)

— Sternites du mâle 1-2 avec tubercules (pl 15, fig 288 , pl 16 fig 316) , tibia médian du mâle avec une carène dentée (et une carène effacée) sur la face externe (pl. 15, fig 284 ; pl. 16, fig 312) , tibia postérieur du mâle faiblement incurvé ... **6**

6. Pronotum (pl. 16, fig 310) ; face interne du tibia postérieur du mâle avec une dent émoussée (pl. 16, fig. 313, 314) ..... ***magnus*** Iwan

— Pronotum (pl. 15, fig. 278) ; face interne du tibia posterieur du mâle avec une forte dent (pl 15, fig. 285, 286) . . ***endrodyi*** Iwan

Identification key for the species

1. Prosternal process blunt or slightly convex at apex (pl 15, figs 293, 294), male abdominal ventrites 1-3 with tubercles, 1st ventrite flat (pl 15, figs 288, 289) . . . **2**

— Prosternal process produced towards mesosternum (pl 15, figs 279, 280), male abdominal ventrites 1 or 1-2 with tubercles, 1st ventrite convex medially (pl. 17, figs 330, 331) . . **5**

2. Posterior pronotal angles not protruding outwards (pl. 18, fig. 354) . . **3**

— Posterior pronotal angles protruding outwards (pl. 18, fig. 346)..... . . . . **4**

3. Pronotal sides rounded (pl 18, fig 354); male mid tibia with 2 dentated ridges on outer side (pl 18, fig 357), hind tibia as in pl 18, figs 358, 359, tubercles on male abdominal ventrites rounded (pl. 18, figs 360, 361) . . . . ***simplex*** Iwan

— Pronotal sides emarginate ((pl 17, figs 334, 335), male mid tibia with 1 dentated (and 1 smooth) ridge on outer side (pl 18, fig 340), hind tibia as in pl 18, figs 341, 342; tubercles on male abdominal ventrites keel-like elongate (pl. 18, figs 343, 344) .... ***ovoideus*** (Fairmaire)

Dar.sz MAN Source MNHN Paris

4. Prosternal process blunt; posterior pronotal angles slightly protruding outwards (pl 15, fig. 291), male abdominal ventrites 1-3 as in pl. 16, figs. 305, 306 ..... ***madagascariensis*** Iwan

— Prosternal process slightly convex at apex; posterior pronotal angles distinctly protruding outwards (pl. 18, fig 346); male abdominal ventrites 1-3 as in pl. 18, figs. 352, 353 ..... ***projectus*** Iwan

5. Male abdominal ventrite 1 with tubercle (pl 17, figs 330, 331); male mid tibia with 2 dentated ridges on outer side (pl. 17, fig 329); male hind tibia strongly bent inwards (pl. 17, figs 326, 327) ..... ***major*** (Fairmaire)

— Male abdominal ventrites 1-2 with tubercles (pl. 15, fig 288, pl. 16, fig 316), male mid tibia with 1 dentated (and 1 smooth) ridge on outer side (pl. 15, fig. 284, pl 16, fig. 312); male hind tibia slightly bent inwards **6**

6. Pronotum as in pl 16, fig 310; male hind tibia with blunt denticle (pl 16, figs 313, 314) ..... ***magnus*** Iwan

— Pronotum as in pl 15, fig 278; male hind tibia with sharp denticle (pl. 15, figs 285, 286) ..... ***endrodyi*** Iwan

Sebastianus endrodyi Iwan, 1999

(Pl. 15, figs 278-289, map 13)

Sebastianus endrodyi Iwan, 1999. 384 – Iwan, 2002a: 99, 2002b 301.

Holotype

Male, "16 km NE of Androka" (TMNH).

Paratypes

"16 km NE of Androka" 1 ♂, 1 ♀ (TMNH).

Measurements

Body length 19.0-21.0 mm, pl/pb = 0.62-0.65, el/eb = 1 19-1 34, el/pl = 2 21-2 25, eb/pb = 1 06 1.16; clypeus – ew/ed ca. 2 8, antenna – al/apl ca 0 7, al/was3 ca. 10.6, as3/as2 ca. 2 7; maxillary palp – mp/as3 ca 1.0; scutellum – pkp/st ca. 2.9; metasternum – cavl/metl ca 1 4; metepisternum ml/mw ca 4 1; legs – tars1/2 ca 1.7, ftibl/ftibw ca. 3 0, dtk/dod ca. 6 0, ffeml/ffemw ca. 4.0; abdomen – pav/pm ca. 1 8.

Diagnostic characters

Head Mid part of mentum wide, with strongly convex and obtuse median keel.

Pronotum widest in the middle, sides distinctly rounded (fig. 278); anterior angles obtuse, slightly protruding frontwards (pl/lapa ca. 18 8), border of lateral margin moderately wide (bp/lbp ca. 37); posterior angles slightly protruding outwards.

Prosternal process strongly convex, protruding towards mesosternum (figs 279-280)

Mesosternum with shallow median groove, lateral margins of mesosternal process slightly convex.

Legs Male fore tibia as in fig. 281, female's as in fig. 282; male mid tibia with 2 ridges on outer side (1st dentated and 2nd smooth) (figs 283 284), in female with 2 sharp ridges (fig 287), hind male tibia bent inwards, with large denticle at 1/3 from base (figs 285-286).

Source : MNHN, Paris

Abdomen Male - ventrites 1-2 with single tubercles in the middle; 1st ventrite distinctly convex (figs 288-289).

Genitalia
Female: lfb/lo ca. 8.6, p/c = 1 0, tc/2bc1 = 0 7, bc1/lc1 = 3.5, c1/c2 = 0.6, c3/c3-c4 = 3.5.

Male: lmb/la ca. 8.2, lbp/lap ca. 2.0.

Sexual dimorphism
Male body more slender el/eb = 1.34; abdominal ventrite 1 and 2 with distinct tubercles (figs 288-289).

Female: body more robust – el/eb = 1.19; abdominal ventrites flat.

Legs structure (figs 281-287)

Distribution (map 13)
MADAGASCAR SJD· – 16 km NE of Androka

Sebastianus madagascariensis Iwan, 1999
(Pl. 15, 16, figs 290-308, map 13)

Sebastianus madagascariensis Iwan, 1999. 382 – Iwan, 2002a· 99, 2002b 301.

Holotype
Male, "Madagascar I. 1956 C. Koch *leg.*/Efoetsy, Betioky Distr" (TMNH).

Paratype
"Madagascar I. 1956 C. Koch *leg.*/Efoetsy, Betioky Distr." , 1 ♀ (TMNH).

Measurements
Body length 20.0-21.0 mm, pl/pb = 0.64-0.65, el/eb = 1.28-1.41, el/pl = 2.27-2.30, eb/pb = 1.05 1.14; clypeus – ew/ed ca 3 1; antenna – al/apl ca. 0.7, al/was3 ca. 13.0, as3/as2 ca. 2 9; maxillary palp – mp/as3 ca 1.0; scutellum – pkp/st ca. 2.6, metasternum – cavl/metl ca 1 6; metepisternum – ml/mw ca. 4 1; legs – tars1/2 ca. 1 7, ftibl/ftibw ca. 2 6, dtk/dod ca. 4.5, ffeml/ffemw ca 4.0; abdomen – pav/pm ca. 1.8.

Diagnostic characters
Head (fig. 290) Mid part of mentum wide, with strongly convex and obtuse median keel.

Pronotum widest in the middle, sides distinctly rounded (fig 291); anterior angles obtuse, distinctly protruding frontwards (pl/lapa ca 7.0); border of lateral margin moderately wide (bp/lbp ca. 35); posterior angles slightly protruding outwards.

Anterior margin of elytra as in fig. 292.

Prosternal process obtuse (figs 293-294).

Mesosternum with shallow median groove, lateral margins of mesosternal process slightly convex.

Legs. Male fore tibia as in figs 295-296; male mid tibia with 2 dentated ridges on outer side (figs 297 298); hind male tibia bent inwards, widened at 1/3 from base (figs 299-300). Female legs as in figs 301-304.

Abdomen Male – ventrites 1 3 with single tubercles in the middle (figs 305-306).

Dar ..sz IWAN Source : MNHN, Paris

Genitalia

Female: lfb/lo ca. 7.8, paraproct shorter than coxites p/c = 0 95, tc/2bc1 = 0.7, bc1/lc1 = 3.5, c1/c2 = 0.5, c3/c3-c4 = 3.6.

Male (fig. 307-308): lmb/la ca. 7.5, lbp/lap ca 1.7

Sexual dimorphism

Male· body more slender – el/eb = 1.41; abdominal ventrite 1-4 with tubercles in the middle (figs 305-306).

Female: body more robust – el/eb = 1.28; abdominal ventrites flat.

Structure of legs (figs 295-304).

Distribution (map 13)

MADAGASCAR SUD: Efoetsy, Betioky Distr, 1956 (*C KOCH*) Andrianambohitra, 1965 (*L. BIGOT*).

Biology

Period of adult appearance: I.

Sebastianus magnus Iwan, 1996

(Pl. 16, figs 309-320; pl. 34, figs 557-558, map 13)

Sebastianus magnus Iwan, 1996: 425. – Iwan, 1999 392, 2002a: 99, 2002b: 301.

Holotype

Male, "Muséum Paris, Madagascar Sud, plateau Mahafaly, 11/12 km. Ouest d'Ankalirano, 250 m, 14/17. I. 1974, P. Viette et A. Peyrieras" (MNHN).

Paratypes

"Muséum Paris, coll. P. Ardoin 1978; 20. V. 1965 Evazy (bush) S.-W. Madagascar L. Bigot *leg.*", 1 ♂ (MNHN); "Muséum Paris, coll. P. Ardoin 1978/III 1969, entre Ampanihy et Androka, Madagascar S W Peyrieras", 1 ♀ (MNHN); "Muséum Paris/Madagascar Sud, plateau Mahafaly, 11/12 km, ouest d'Ankalirano, 250 m., P. Viette et A Peyrieras", 18 ♂♂, 25 ♀♀ (14/17 I 1974), 12 ♂♂, 9 ♀♀ (1/6 II 1974), 20 ♂♂, 32 ♀♀ (18/31 II. 1974) (MNHN), "Madagascar Sud, S. du plat. Mahafaly, 50 km. O Ampanihy, A. Peyrieras, V. 1972/Muséum Paris", 7 ♀♀ (MNHN), "Madagascar Sud, S E. de Tranomaro, Androatsabo, 400 m. Peyrieras, XII 1971/ Muséum Paris, Madagascar Est mission CNRS R C P. n° 225", 1 ♀ (MNHN); "Institut scientifique Madagascar/lac Tsimanampetsotsa - V 51 R.P/Muséum Paris, coll. P. Ardoin, 1978", 2 ♂♂ (MNHN), "Madagascar I 1956 C. Koch *leg* /Itampolo, Ampanihy Distr.", 5 ♂♂, 3 ♀♀ (HNHM), 1 ♂, 2 ♀♀ (NMB); "Madagascar I., 1956 C. Koch *leg* /S W of Itrobiky, Ampanihy Distr.", 2 ♂♂, 1 ♀ (HNHM); "Institut scientifique Madagascar/lac Tsimanampetsotsa – V 51, R.P./Muséum Paris", 3 ♀♀ (MNHN); "Madagascar I, 1956 C Koch *leg.*/Efoetsy, Betioky Distr", 3 ♂♂, 1 ♀ (HNHM); "Madagascar I., 1956 C Koch *leg.*/Ambilalialika, Betioky Distr." (HNHM) 1 ♂, "Muséum Paris, Analamazoatra, Madagascar, Decary, 1935", 1 ♀ (MNHN); "Muséum Paris, Madagascar, Pays Mahafaly, Bastard, 1900", 1 ♀ (MNHN), "Muséum Paris/XII. 51, R P/Cap Sainte Marie", 1 ♀ (MNHN).

Source · MNHN, Paris

Measurements

Body length 18.0 29.0 mm, pl/pb = 0 62-0.67, el/eb = 1.24-1.35, el/pl = 2.20-2 37, eb/pb = 1 09-1.20; clypeus – ew/ed ca. 2.5; antenna – al/apl ca 0 6, al/was3 ca. 11.0, as3/as2 ca. 3.0; maxillary palp – mp/as3 ca. 1.0, scutellum – pkp/st ca 2 8; metasternum · cavl/metl ca. 1 3, metepisternum – ml/mw ca 5 0; legs – tars1/2 ca 1.8, ftibl/ftibw ca 2 7, dtk/dod ca. 5.0, ffeml/ffemw ca. 3 2; abdomen – pav/pm ca. 2.1.

Diagnostic characters

Head. Mid part of mentum wide, with strongly convex and obtuse median keel, antenna as in fig. 309.

Pronotum widest in the middle, sides evenly rounded (fig 310); anterior angles obtuse, moderately protruding frontwards (pl/lapa ca 12.0); border of lateral margin moderately wide (bp/lbp ca 49); posterior angles slightly protruding outwards.

Prosternal process distinctly convex, protruding towards mesosternum.

Mesosternum with shallow median groove, lateral margins of mesosternal process slightly convex.

Legs Male fore tibia as in fig. 311; male mid tibia with 2 ridges on outer side (1st dentate, 2nd smooth) (fig 312), hind male tibia bent inwards, with large denticle at 1/3 from base (figs 313-314). Female legs as in fig. 315.

Abdomen. Male – ventrites 1-2 with single tubercles in the middle, 1st ventrite distinctly convex (figs 316-317); defensive glands as in fig. 318.

Metendosternite (fig. 319) – as in other members of the subtribe Platynotina.

Genitalia

Female (fig. 320)· lfb/lo ca 10.3, paraproct shorter than coxites p/c ca. 0.6, tc/2bc1 ca. 0.7, bc1/lc1 ca. 4.0, c1/c2 ca. 0.7, c3/c3-c4 ca. 3.8.

Male: lmb/la ca. 8.2, lbp/lap ca. 2.4.

Sexual dimorphism

Male: body more slender – el/eb ca. 1.35; abdominal ventrite 1 and 2 with tubercles in the middle (figs 316-317).

Female body more robust – el/eb ca 1 24, all abdominal ventrites flat

The structure of legs (figs 311-315).

Distribution (map 13)

MADAGASCAR OUEST: – Evazy, 1965 (*L. BIGOT*).

MADAGASCAR SUD. – Ambilalialika, Betioky Distr., 1956 (*C. KOCH*). – Entre Ampanihy et Androka, 1969 (*A PEYRIERAS*). – Plateau Mahafaly, 11/12 km ouest d'Ankalirano, 1974 (*P. VIETTE/A. PEYRIERAS*). – Cap Sainte Marie, 1951 (*R. PAULIAN*). – Efoetsy, Betioky Distr., 1956 (*C. KOCH*) - Itampolo, Ampanihy Distr , 1956 (*C. KOCH*). – S.W of Itrobiky, Ampanihy Distr , 1956 (*C. KOCH*) Plateau Mahafaly 50 km. O Ampanihy, 1972 (*A. PEYRIERAS*). – S.E. de Tranomaro, Androatsabo, 1971 (*A. PEYRIERAS*) – Lac Tsimanampetsotsa, 1951 (*R PAULIAN*).

Biology

Period of adult appearance: I, II, V, XII.

Habitat: "bush"; altitude: 250 m, 400 m.

Source : MNHN, Paris

Sebastianus major (Fairmaire, 1899)

(Pl. 17, figs 321-332; pl 34, fig. 559, map 13)

Melanocratus major Fairmaire, 1899· 533 – Gebien, 1910. 307, 1938: 411, Ardoin, 1969b: 461;

Sebastianus major: Iwan, 1996: 419, 1999· 392, 2002a 99, 2002b. 301

Lectotype

Male, designated by Iwan (1996) (MNHN): "Type; Muséum Paris, Madagascar, Grandidier 1875/*Melanocratus major* Frm. Madagascar/Muséum Paris 1906, coll. Léon Fairmaire".

Paralectotypes

"Type, Muséum Paris, Madagascar, Grandidier 1875/*Melanocratus major* Frm./Muséum Paris 1906, coll Léon Fairmaire", 2 ♀♀ (MNHN); "Muséum Paris, coll. Ch Alluaud/*Melanocratus major* Frm /Madagascar Centre-Sud, Alluaud, 1901. 84", 1 ♂ (MNHN), "Muséum Paris, coll Ch. Alluaud/*Melanocratus ovoideus* Frm./Madagascar Centre-Sud, Alluaud, 1901. 84.", 1 ♀ (MNHN).

Measurements

Body length 17.0-24 0 mm, pl/pb = 0.60 0.70, el/eb = 1.33-1.50, el/pl = 2.13-2 42, eb/pb = 1.07-1.13, clypeus – ew/ed ca 2 6, antenna al/apl ca. 0.7, al/was3 ca. 14.0, as3/as2 ca. 4 0; maxillary palp – mp/as3 ca 1 1; scutellum – pkp/st ca 2.8; metasternum – cavl/metl ca. 1 4; metepisternum – ml/mw ca. 4.1; legs – tars1/2 ca. 1.9, ftibl/ftibw ca. 2.8, dtk/dod ca 4 0, ffeml/ffemw ca. 4.0; abdomen – pav/pm ca 1 9.

Diagnostic characters

Head (fig 321), mid part of mentum wide, with strongly convex and obtuse median keel.

Pronotum widest in the middle, sides rounded (fig 322); anterior angles right, distinctly protruding frontwards (pl/lapa ca 8.8); border of lateral margin moderately wide (bp/lbp ca. 36); posterior angles distinctly protruding outwards.

Elytral epipleuron evenly narrowing towards apex (fig. 323).

Prosternal process distinctly convex, protruding towards mesosternum.

Mesosternum with deep median groove, lateral margins of mesosternal process strongly convex

Metasternum elongated (fig. 324)

Legs. Male fore tibia as in fig. 325; male mid tibia with 2 dentated ridges on outer side; hind male tibia bent inwards, with 2 obtuse denticles at base (figs 326-327). Female legs as in figs 328-329.

Abdomen. Male – 1st ventrite distinctly convex, with tubercle in the middle (figs 330-331).

Genitalia

Female (fig. 332). lfb/lo ca 9.6, paraproct equal to coxites p/c ca 1 0, tc/2bc1 ca. 0.7, bc1/lc1 ca. 4.2, c1/c2 ca. 0 4, c3/c3-c4 ca. 2.8.

Male· lmb/la ca 8.3, lbp/lap ca 2.3.

Sexual dimorphism

Male: body more slender – el/eb = 1.44-1.50, abdominal ventrite 1 convex in the middle (figs 330-331)

Source · MNHN, Paris

Female. body more robust – el/eb = 1 33-1.43; abdominal ventrites flat.

The structure of legs (figs 325-329).

Distribution (map 13)

MADAGASCAR EST: – Soanierana – Andrahomana, entre Fort Dauphin et le Cap Sainte Marie, 1926 (*R. DECARY*).

MADAGASCAR OUEST: – Belo sur Tsiribihina (1956). – Plaines du Fiherenana, 1905 (*F GEAY*). – Réserve spéciale du Zombitsy matsabory, 1969 (*P VIETTE/P. GRIVEAUD*) – Zombitsy, Sakaraha, 1959 (*RAHARIZONINA*)

MADAGASCAR SUD: – Ambilalialika, Betioky Distr , 1956 (*C. KOCH*). – Andranohinaly, 1904 (*S. VOELTZKOW*). – Ankororoka, Tuléar [= Toliara] Distr., 1956 (*C KOCH*). – Lac Tsimanampetsotsa, Andranomby, 1948 (*R. PAULIAN*). – Environs de Tuléar [= Toliara], plateau calcaire au S. E de Miary (40 m), 23 27. I. 1969 (*P VIETTE/P. GRIVEAUD*) – S du plateau Mahafaly, 50 km O. Ampanihy, 1972 (*A. PEYRIERAS*) – Prov. de Tuléar [= Toliara], 1926 (*G. PETIT*) – Tongobory, Betioky Distr., 1956 (*C KOCH*). – Tongobory, Sept Lacs (*P. A. ROBINSON*). – Evazy, 1965 (*L. BIGOT*)

Biology

Period of adult appearance: I, II, V, VI, VII, XII.

Habitat: "savane sous pierres et troncs morts", altitude. 40 m, 200 m, 630 m, 640 m.

Sebastianus ovoideus (Fairmaire, 1902)

(Pl 17, 18, figs 333-345 ; pl. 28, fig. 527 ; pl. 34, fig. 560, map 13)

Melanocratus ovoideus Fairmaire, 1902: 329. - Gebien, 1910: 307, 1938: 411; Ardoin, 1969b: 462; Ferrer, 1998: 358

Sebastianus ovoideus: Iwan, 1996: 427, 1999: 392, 2002a: 99, 2002b: 301.

Holotype

Female, "Muséum Paris 1906, coll. Léon Fairmaire/Type/Melanocratus ovoideus Fairm n. sp./Plateau de l'Androy – Rég d'Ambovombe" (MNHN).

Measurements

Body length 16.0-24 0 mm, pl/pb = 0 57-0.64, el/eb = 1.32-1 39, el/pl = 2.33-2.75, eb/pb = 1.09-1 19; clypeus – ew/ed ca. 3.0; antenna – al/apl ca. 0 7, al/was3 ca. 13.0, as3/as2 ca 3.0; maxillary palp – mp/as3 ca. 0.9; scutellum – pkp/st ca. 3 0; metasternum – cavl/metl ca. 1.4, metepisternum - ml/mw ca. 3.9; les pattes – tars1/2 ca. 2.2, ftibl/ftibw ca. 3.2, dtk/dod ca. 5.0, ffeml/ffemw ca. 4.9; abdomen – pav/pm ca. 1.8.

Diagnostic characters

Head. Mid part of mentum wide, with strongly convex and obtuse median keel (fig. 333).

Pronotum widest at 1/3 from base, sides irregularly rounded (male – fig. 334, female – fig. 335), anterior angles right, distinctly protruding frontwards (pl/lapa ca. 8.8), border of lateral margin moderately wide (bp/lbp ca 33); posterior angles obtuse, not protruding outwards

Source : MNHN, Paris

Prosternal process obtuse (figs 336-337).

Mesosternum with shallow median groove, lateral margins of mesosternal process slightly convex.

Male legs Fore tibia as in fig. 338 (female – fig. 339); mid tibia with 2 ridges on outer side (1st dentate, 2nd smooth) (fig 340), hind male tibia bent inwards, slightly widened at 1/3 from base (figs 341-342).

Abdomen Male – ventrites 1-3 with single longitudinal tubercles (keels) in the middle (figs 343-344)

Genitalia

Female (fig. 345). lfb/lo ca 9 1, paraproct shorter than coxites p/c ca. 0 8, tc/2bc1 ca. 0.7, bc1/lc1 ca. 4.7, c1/c2 ca. 0.6, c3/c3-c4 ca. 2.0, c4-c3/c1 = 0.05.

Male: lmb/la ca. 9.3, lbp/lap ca. 2.3.

Sexual dimorphism

Male: body more slender – el/eb ca. 1.39, abdominal ventrites 1 3 wih tubercles in the middle (figs 343-344)

Female: body robust – el/eb ca. 1.33; abdominal ventrites flat

Structure of legs (figs 338-342)

Distribution (map 13)

MADAGASCAR SUD: Androka, Ampanihy Distr., 1956 (*C KOCH*). Androka, Prov. de Tuléar [= Toliara], 1913 (*Lieutenant GAUDRON*) Ampotaka Plateau de l'Androy, Rég. d'Ambovombe. – Beloha. – Lac Tsimanampetsotsa, 1965 (*L BIGOT*) Andrianambohitra, 1965 (*L BIGOT*)

Biology

Period of adult appearance: I, V

Sebastianus projectus Iwan, 1996

(Pl 18, figs 346-353; pl. 26, figs 508-509; pl 28, fig. 528; pl. 34, fig. 561, map 13)

Sebastianus projectus Iwan, 1996: 423 Iwan, 1999. 392, 2002a 99, 2002b: 301.

Holotype

Male, "Madagascar I. 1956 C Koch *leg.*/Androka, Ampanihy Distr." (HNHM).

Paratypes

"Muséum Paris/Madagascar Sud, plateau Mahafaly, 11/12 km. Ouest d'Ankalirano, 250 m, 14/17. I 1974, P. Viette et A Peyrieras", 37 ♀♀, 23 ♂♂ (18/31-I-1974), 5 ♂♂, 6 ♀♀ (MNHN); "Muséum Paris, coll. P Ardoin 1978/15. V. 1948, Sakoa, Betioky Sud, Tuléar, Prov., Madagascar", 1 ♀ (MNHN); "Muséum Paris/Institut scientifique Madagascar/Itampolo V-51 RP", 4 ♂♂ (MNHN), "Madagascar I. 1956 C Koch *leg* /Androka, Ampanihy Distr.", 11 ♂♂, 20 ♀♀ (HNHM); "16 km. NE of Androka", 1 ♂, 3 ♀♀ (HNHM), "Madagascar I. 1956, C Koch *leg.*/SW of Itrobiky, Ampanihy Distr.", 11 ♂♂ (HNHM), "Madagascar I. 1956 C. Koch *leg* /Cap Ste. Marie, Ambovombe Distr.", 1 ♂, 1 ♀ (HNHM); "Madagascar I. 1956 C Koch *leg* /Antanimora, Ambovombe Distr.", 5 ♂♂, 5 ♀♀ (HNHM).

Source : MNHN, Paris

Measurements

Body length 16.0-22.0 mm, pl/pb = 0.59-0.67, el/eb = 1 29-1.46, el/pl = 2.22-2 48, eb/pb = 1.02-1 11; clypeus – ew/ed ca. 2.5, antenna – al/apl ca. 0.7, al/was3 ca. 14 0, as3/as2 ca. 3.0; maxillary palp – mp/as3 ca. 1.1; scutellum – pkp/st ca. 2.8; metasternum – cavl/metl ca. 1 4; metepisternum – ml/mw ca. 3.7; legs – tars1/2 ca 1.9, ftibl/ftibw ca 2 5, dtk/dod ca. 4.5, ffeml/ffemw ca. 4 0; abdomen – pav/pm ca. 2.0

Diagnostic characters

Head. Mid part of mentum wide, with strongly convex and obtuse median keel

Pronotum widest in the middle, sides (fig. 346); anterior angles right, distinctly protruding frontwards (pl/lapa ca. 7.3), border of lateral margin moderately wide (bp/lbp ca. 35); posterior angles sharp, distinctly protruding outwards

Prosternal process obtuse.

Mesosternum with deep median groove, lateral margins of mesosternal process strongly convex.

Male legs. Fore tibia as in fig 347 (female fig. 348); mid tibia with 2 dentated ridges on outer side (fig. 349); hind male tibia bent inwards, slightly widened at 1/3 from base (figs 350-351).

Abdomen. Male – ventrites 1-3 with single transversal tubercles in the middle (figs 352-353).

Genitalia

Female· lfb/lo ca 7.6, paraproct shorter than coxites p/c ca. 0 8, tc/2bc1 ca 0 7, bc1/lc1 ca. 4.6, c1/c2 ca. 0.5, c3/c3-c4 ca. 2.5, c4-c3/c1 = 0.2.

Male: lmb/la ca. 8.2, lbp/lap ca. 2.4

Sexual dimorphism

Male body more slender · el/eb = 1 35-1.46; abdominal ventrite 1-3 with tubercles in the middle (figs 352-353).

Female: body more robust – el/eb = 1.29-1 34; all abdominal ventrites flat.

The structure of legs (figs 347-351).

Distribution (map 13)

MADAGASCAR SUD. – Androka, Ampanihy Distr., 1956 (*C. KOCH*) – Antanimora, Ambovombe Distr., 1956 (*C KOCH*). – Cap Ste. Marie, Ambovombe Distr, 1956 (*C KOCH*). – Itampolo, 1951 (*R PAULIAN*). – Itampolo, 1965 (*L BIGOT*). – SW of Itrobiky, Ampanihy Distr. – Plateau Mahafaly, 11/12 km à l'ouest d'Ankalirano, 1974 (*P. VIETTE/ A. PEYRIERAS*). – Sakoa, Betioky Sud, Tuléar [= Toliara] Prov., 1948. – ca. 40 km N Betioky, fra Tuléar [= Toliara] e Ampanihy boscaglia, 1991 (*L. BARTOLOZZI/S. TAITI/C. RAHARIMINA*)

Biology

Period of adult appearance· I, V.

Sebastianus simplex Iwan, 1996

(Pl. 18, figs 354-362, pl. 27, figs 510-521; pl 35, figs 562-563, map 13)

Sebastianus simplex Iwan, 1996· 424. Iwan, 1999: 392, 2002a· 99, 2002b: 302

Source · MNHN, Paris

Holotype

Male, "Madagascar I. 1956 C. Koch *leg* /Itampolo, Ampanihy Distr" (HNHM)

Paratypes

"Madagascar I 1956 C. Koch *leg* /Itampolo, Ampanihy Distr", 4 ♂♂, 13 ♀♀ (HNHM); "Madagascar I 1956 C Koch *leg* /Androka, Ampanihy Distr", 2 ♂♂ (HNHM).

Measurements

Body length 15 0-19 5 mm, pl/pb = 0 60-0 66, el/eb = 1.26-1.38, el/pl = 2 16-2 34, eb/pb = 1.02-1.10; clypus – ew/ed ca. 2.7; antenna – al/apl ca. 0.7, al/was3 ca. 15.0, as3/as2 ca. 2 6, maxillary palp mp/as3 ca. 1.0; scutellum – pkp/st ca 3 7, metasternum cavl/metl ca. 1.3, metepisternum ml/mw ca 5 5, legs – tars1/2 ca. 2.1, ftibl/ftibw ca. 3.4, dtk/dod ca. 5 4, ffeml/ffemw ca. 4.7, abdomen pav/pm ca. 2 3

Diagnostic characters

Head. Mid part of mentum wide, with strongly convex and obtuse median keel.

Pronotum widest in the middle, sides (fig 354), anterior angles sharp, distinctly protruding frontwards (pl/lapa ca. 6.5); border of lateral margin moderately wide (bp/lbp ca 25), posterior angles obtuse, not protruding outwards.

Prosternal process obtuse.

Mesosternum with shallow median groove, lateral margins of mesosternal process slightly convex.

Male legs Fore tibia as in fig. 355 (female – fig 356); mid tibia with 2 dentated ridges on outer side (fig. 357); hind male tibia straight, emarginate at base (figs 358-359).

Abdomen Male – ventrites 1-3 with single obtuse tubercles in the middle (figs 360-361).

Genitalia

Female (fig 362): lfb/lo ca. 11.0, paraproct shorter than coxites p/c ca 0.6, tc/2bc1 ca. 0 7, bc1/lc1 ca. 4.3, c1/c2 ca. 0.7, c3/c3-c4 ca. 2.3.

Male: lmb/la ca. 8.7, lbp/lap ca. 1.9.

Sexual dimorphism

Male: body more slender – el/eb = 1 35-1.38, abdominal ventrite 1 3 with tubercles (fig. 360-361).

Female: body more robust – el/eb = 1.26-1.34, all abdominal ventrites flat

The structure of legs (fig. 355-359).

Distribution (map 13)

MADAGASCAR SJD: – Androka, Ampanihy Distr, 1956 (*C. KOCH*). – Itampolo, Ampanihy Distr., 1956 (*C. KOCH*). – Itampolo, 1965 (*L. BIGOT*).

Biology

Period of adult appearance: I.

Genus *Styphacus* Fairmaire, 1901

Styphacus Fairmaire, 1901: 71 – Gebien, 1910: 308, 1938: 411; Iwan, 1996 428, 2002a: 102, 2002b: 304, 2004: 404

Source : MNHN, Paris

Genus type species

Styphacus decorsei Fairmaire, 1901; designated by GEBIEN (1938).

Systematic position

Styphacus is the closest related to *Doyenus* and *Sebastianus*. The genus differs from both those genera in the following characters base concave-arcuate (middle of pronotum not protruding beyond the level of posterior angles, as in *Doyenus*); elytral anterior margin arcuately convex frontwards between humeri; epipleuron with concavity (a unique character within Platynotini), narrowed medially lateral pronotal border, and specific structure of ovipositor (short distance between base of coxite plates three and four, c3/c3 c4 ca. 3 1-5.0, as in *Melanocratus*).

Measurements

Body length 11.6-29 0 mm, pl/pb = 0 62-0.79, el/eb = 1.26-1.64, el/pl = 2.13-2.68, eb/pb = 1.03-1.32.

Diagnostic characters

Head elongated, with shallow depressions near clypeus, frons and genae; clypeus with wide and deep emargination (ew/ed = 2 1-3.5); genal canthus equal to or slightly wider than eyes; eye laterally narrowed (between tempus and genal canthus 4 5 ommatidia visible), circumocular depression absent; fronto-clypeal suture absent. Antenna short (al/apl = 0.6-0 8) and moderately robust (al/was3 = 11.3-14 3), 3rd antennomere moderately short (as3/as2 = 2 4-4 0), distal segments (antennomeres 7-11) evenly widened, transverse. Mentum with short lateral wings, mid part short and narrowing anteriorly, median keel narrow; submentum triangular with slightly elongated base. Last segment of maxillary palp narrow (mp/as3 = 0.9-1.3)

Pronotum with slightly rounded sides, pronotal hypomeron evenly convex and smooth, sometimes depressed near lateral margins; anterior angles slightly to distinctly protruding frontwards (pl/lapa = 6 5-14 0), posterior angles sharp and protruding beyond the middle of base; base concave-arcuate; border of anterior margin widened medially, lateral border moderately wide to narrow (bp/lbp = 27-48), strongly narrowed medially (bp/lbp = 40-96) (of even width along its whole length anterior to posterior angles in *S. phreneticus*), basal border entire (slightly widened in middle).

Scutellum wide (pkp/st = 1.7-2 9), depressed below the plane of elytra.

Elytron of 9 rows (striae punctate-sulcate or sulcate) connected as follows: 1-9, 2-7, 3-6, 4 5, 8-free (sometimes rows 1, 8 and 9 disappeared apically); intervals moderately convex (sometimes flat), smooth (punctures invisible); elytra slightly tucked in posteriorly (part of intervals IX visible from underside), anterior margin (base) elytral anterior margin arcuately convex frontwards between humeri and bordered (reaching humeri), (unbordered in *S kochi*); base of elytra lateral of scutellum not depressed; epipleuron depressed and widened at the level of 3-4 abdominal ventrites, inner margin of apical part unbordered and rounded at apex.

Prosternum evenly convex with narrow border of anterior margin; prosternal process protruding towards mesosternum or blunt (arcuate), bordering wide and disappearing at apex.

Wings entirely reduced.

Metasternum between insertions of mid and hind coxae moderately short (cavl/metl = 1.4-2.0)

Metepisternum rectangular and moderately long (ml/mw = 2.8-4.0).

Legs. Male fore tarsi slightly widened; all tarsi with pubescence on underside, with glossy median groove; hind tarsi moderately long (tars1/2 = 1 3-2.4); fore tibia (in both sexes)

Source : MNHN, Paris

strongly widened towards apex (ftibl/ftibw = 2.2-3.3), outer margin of mid tibia with 2 dentated ridges, inner spur of hind tibia moderately long to short (dtk/dod = 2.8-5.4), fore femur distinctly widened (ffeml/ffemw = 3.0-4.4); hind male femora concave on inner side.

Abdominal ventrite sometimes slightly convex in male; bordering of the last abdominal ventrite absent; process of I abdominal ventrite moderately wide to wide (pav/pm = 1.9-2.4)

Genitalia

Female: lfb/lo = 6.7-9.1, ovipositor: paraproct equal to or shorter than coxites (p/c = 0.9-1.2), paraproct strongly reduced and slightly sclerotized on ventral side; (bc1/lc1 = 2.6-4.2), (c1/c2 = 0.6-1.0), (c3/c3-c4 = 3.0-5.0), (c4.c3/c1 = 0.05-0.30), gonostylus present; bursa copulatrix with no sclerite, spermatheca branched from the base, with narrow ducts, spermathecal accessory gland present.

Male: lmb/la = 6.8-10.4, lbp/lap = 1.9-2.8.

Sexual dimorphism

Male body more slender than female, epipleuron with deep depression in male (shallow in female)

Male: fore tarsi widened, inner side of tibiae and femora with structures specific for each species.

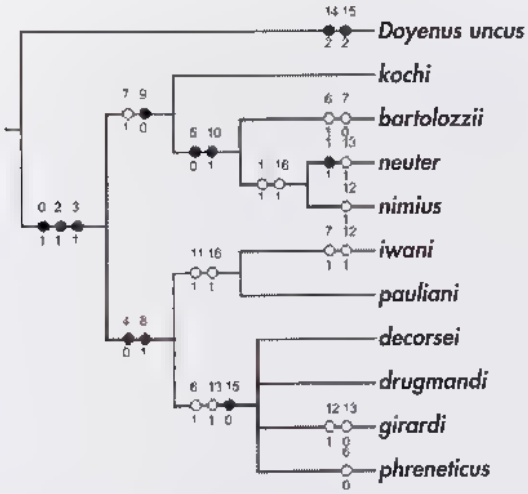
Female: anterior tarsi and tibiae simple (fore tibia distinctly widened).

Species composition

The genus is composed of ten species: *bartolozzii*, *decorsei*, *drugmandi*, *girardi*, *iwani*, *kochi*, *neuter*, *nimius*, *pauliani* and *phreneticus*. Hypotheses on the phylogeny are presented on cladograms 4-5.

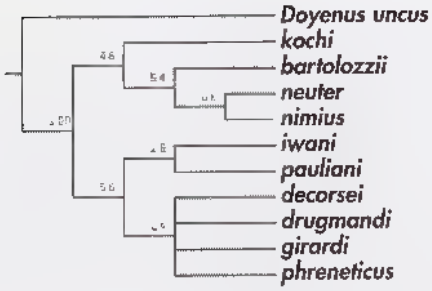
Distribution (map 14)

Malagasy endemic.

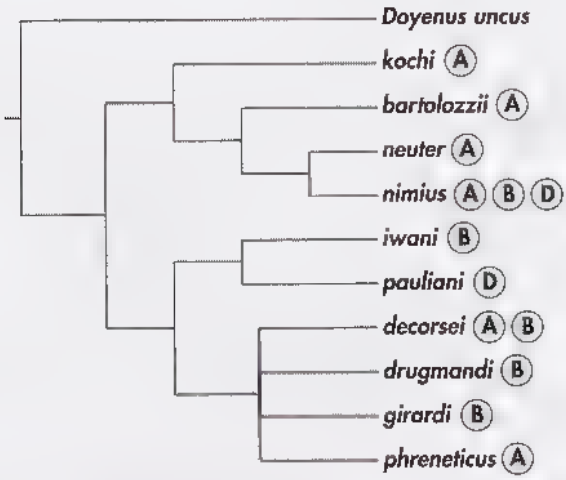


Cladograms 4. Hypotheses on the phylogeny of the genus *Styphacus* Fairmaire. Cladistic analysis including all species (10) of the genus *Styphacus* Fairmaire and *Doyenus uncus* Iwan as the out-group; Hennig 86 programme was used at initial stages; further analyses and graphic representation were done with Winclada and Nona; algorithm "ie" yielded four three 27 steps long, CI = 66, RI = 73; consensus tree obtained with "nelsen" algorithm was presented. A - cladogram with characters and character state values.

Source : MNHN, Paris



B - cladogram with values after bootstrap analysis.



Cladogram 5. Phylogeny of *Styphacus* Fairmaire with distribution of species.
A, B, D - areas of endemism (see map 3).

Clé d'identification des espèces

1. Épaule rebordée (pl. 19, fig. 364) **2**

— Épaule non rebordée (pl. 22, fig. 434) ..... ***kochi*** Iwan

2. Les quatre angles du pronotum simples (pl 19, fig 373) **3**

— Les quatre angles du pronotum avec de petites saillies (pl. 25, fig. 493) ..... ***phreneticus*** Iwan

3. Tibia antérieur des deux sexes légèrement élargi avec de fins denticules sur la face externe (pl. 19, fig. 367 ; pl. 23, fig. 453-455 ; pl. 24, fig. 469-472) **4**

— Tibia antérieur des deux sexes avec une dent médiane sur la face externe ou nettement incurvé chez le mâle (pl. 20, fig. 391 ; pl. 22, fig. 425) **6**

4. Apex de l'élytre simple (pl. 24, fig. 468) ; tibia antérieur du mâle plus grêle (pl 19, fig. 367 ; pl. 24, fig. 470) **5**

— Apex de l'élytre denté (pl. 23, fig. 451) ; tibia antérieur du mâle plus robuste (pl 23, fig. 453, 454) ..... ***neuter*** (Fairmaire)

Source : MNHN, Paris

5. Longueur du corps . 16,5-21,0 mm ; rebord externe de l'épaule nettement saillant en avant (pl. 19, fig 364) , tibia médian du mâle simple sur la face interne, à la base (pl. 19, fig. 369, 370) ..... ***bartolozzii*** Iwan

— Longueur du corps : 13,8 16,0 mm , rebord externe de l'épaule légèrement saillant en avant (pl. 24, fig 467) ; tibia médian du mâle anguleux sur la face interne, à la base (pl. 24, fig. 473, 474) ..... ***nimius*** Iwan

6. Longueur du corps 19,0-29,0 mm ; marges latérales de la saillie mésosternale dictinctement convexes (pl. 19, fig 377) 7

— Longueur du corps . 11,6-13,1 mm ; saillie mésosternale plane (pl 21, fig 424) .. 9

7. Tibia médian chez les deux sexes (pl. 19, fig 382-385) , fémur postérieur du mâle avec une dent préapicale sur la face interne (pl 20, fig. 388, 389) 8

— Tibia médian chez les deux sexes (pl. 21, fig. 410-413); fémur postérieur du mâle inerme sur la face interne (pl 21, fig 416, 417) ..... ***girardi*** Iwan

8. Tibia antérieur du mâle fortement arqué, l'angle fortement saillant du côté externe, formant une dent (pl 19, fig 378, 379) ; tibias médian et postérieur (pl. 19, 20, fig. 382 387) ..... ***decorsei*** Fairmaire

— Tibia antérieur du mâle fortement arqué, l'angle arrondi du côté externe (pl. 20, fig. 391-392) , tibias médian et postérieur (pl. 20, fig 395-400) .. ***drugmandi*** Iwan

9. Canthus aussi grand que l'œil (pl 21, fig. 421) ; tibias antérieur et médian du mâle (pl. 22, fig. 425-428) ..... ***iwani*** Ferrer

— Canthus plus grand que l'œil (pl. 24, fig. 478) ; tibias antérieur et médian du mâle (pl. 25, fig. 486-489) ..... ***pauliani*** Iwan

Identification key for the species

1. Anterior margin (base) of elytra bordered (pl. 19, fig. 364) 2

— Anterior margin (base) of elytra unbordered (pl. 22, fig 434)..... ***kochi*** Iwan

2. Pronotal angles simple (pl. 19, fig. 373) 3

– Pronotal angles with small processes on apices (pl. 25, fig. 493) . ***phreneticus*** Iwan

3. Fore tibia in both sexes slightly widened or with fine denticles on the outer margin (pl. 19, fig. 367; pl. 23, figs 453-455; pl. 24, figs 469-472) 4

— Fore tibia in both sexes with median denticle on the outer margin or distinctly curved inside in male (pl. 20, fig. 391; pl 22, fig. 425) 6

4. Elytron simple on apical part (pl 24, fig. 468), male fore tibia slender (pl 19, fig 367; pl. 24, fig. 470) 5

— Elytron with small process on apical part (pl 23, fig. 451), male fore tibia robust (pl. 23, figs 453, 454) ..... ***neuter*** (Fairmaire)

5. Body length 16 5-21.0 mm, lower edge of elytral base distinctly protruding frontwards (pl 19, fig. 364), male mid tibia simple on inner side (at base) (pl 19, figs 369, 370) ..... ***bartolozzii*** Iwan

Source : MNHN, Paris

— Body length 13.8-16 0 mm; lower edge of elytral base slightly protruding frontwards (pl. 24, fig 467); male mid tibia emarginate at base ventrally (pl 24, figs 473, 474) ..... ***nimius*** Iwan

6. Body length 19 0-29 0 mm; lateral margins of mesosternal process distinctly convex (pl. 19, fig 377) **7**

— Body length 11 6 13.1 mm; mesosternal process flat (pl. 21, fig. 424) **9**

7. Mid tibia in both sexes as in pl. 19, figs 382-385; male hind femur with denticle on inner side (pl. 20, figs 388, 389) **8**

— Mid tibia in both sexes as in pl. 21, figs 410 413, male hind femur without denticle on inner side (pl. 21, figs 416, 417) ..... ***girardi*** Iwan

8. Male fore tibia with median denticle on the outer margin (pl. 19, figs 378, 379); male mid and hind tibiae as in pl. 19, 20, figs 382-387 ..... ***decorsei*** Fairmaire

— Male fore tibia without median denticle on the outer margin (pl. 20, figs 391-392); male mid and hind tibiae as in pl. 20, figs 395-400 ..... ***drugmandi*** Iwan

9. Genal canthus equal to eyes (pl. 21, fig. 421); male fore and mid tibiae as in pl. 22, figs 425-428 ..... ***iwani*** Ferrer

— Genal canthus wider than eyes (pl. 24, fig. 478); male fore and mid tibiae as in pl. 25, figs 486-489 ..... ***pauliani*** Iwan

Styphacus bartolozzii Iwan, 1996

(Pl. 19, figs 363-370; pl. 28, fig. 529; pl. 35, fig. 564, map 14)

Styphacus bartolozzi Iwan, 1996: 439. – Ferrer, 1998 358; Iwan, 2002a: 103, 2002b: 304, 2004: 405

Holotype

Male, "Madagascar 11 km east of Sakaraha (Madagascar West, prefecture of Sakaraha)/Dried Forest of Zombitsy, 15. V. 1991, L. Bartolozzi, S. Taiti and Clarisse Raharimina leg, N° 7816". (MZUF)

Paratypes

"Madagascar 11 km East of Sakaraha (Madagascar West, Prefecture of Sakaraha)/Dried Forest of Zombitsy, 15 V. 1991, L. Bartolozzi, S. Taiti and Clarisse Raharimina *leg*", 4 ex (MZUF, N° 7817), 1 ♂, 1 ♀ (JFC), "Madagascar, I 1956, C. Koch *leg.*/Lambomakandro, Tuléar Distr.", 1 ♂, 3 ♀♀ (HNHM); "Muséum Paris, 1935, R Catala, Madagascar, Lambomakandro Tuléar" 10 ♂♂, 6 ♀♀ (MNHN), "Institut scientifique Madagascar; Madagascar Sud-Ouest, Lambomakandro, 550 m., Sakaraha 4. II 58, P Griveaud", 2 ♂♂ (HNHM), "Muséum Paris/Madagascar Ouest, réserve spéciale du Zombitsy, Est de Sakaraha matsabory, 640 m, 7/10. II. 1974, P. Viette et A. Peyrieras", 1 ♂, 1 ♀ (MNHN); "Muséum Paris/Institut scientifique Madagascar/Madagascar Sud-Ouest, Lambomakandro, 500 m., Tuléar, VII 57, Andria R.", 1 ♀ (MNHN); "Muséum Paris/III. 1969, lac Tsimanampetsotsa, Madagascar S.-W, Vadon & Peyrieras", 1 ♂ (MNHN); "S o Ctr. Madagascar, Ljungqvist", 1 ♂, 4 ♀♀ (HNHM).

Source : MNHN, Paris

Measurements

Body length 16.5-21 0 mm, pl/pb = 0.64 0 73, el/eb = 1 31·1 61, el/pl – 2.21-2.30, eb/pb = 1 04-1 09; clypeus ew/ed ca. 2 4; antenna – al/apl ca 0.7, al/was3 ca. 13.3, as3/as2 ca 3.6, maxillary palp – mp/as3 ca. 1.1; scutellum – pkp/st ca. 2.6; metasternum – cavl/metl ca. 1.7; metepisternum – ml/mw ca. 3.0, legs – tars1/2 ca. 1 9, ftibl/ftibw ca 3 3, dtk/dod ca 3 0, ffeml/ffemw ca 3.5; abdomen pav/pm ca 2 4.

Diagnostic characters

Head. Genal canthus as wide as eye; mentum as in fig. 363

Pronotum with regular angles, anterior angles distinctly protruding frontwards (pl/lapa ca. 9 5); border of lateral margin wide (bp/lbp ca. 27), distinctly narrowed medially (bp/lbp ca. 40).

Elytral base bordered, anterior margin distinctly protruding frontwards (fig. 364), apex as in figs 365-366.

Prostenum Prosternal process protruding towards mesosternum, apical border entire

Mesosternal process flat.

Legs Fore male tibia slender, widened at apex (figs 367-368), fore female tibia widened medially (with small denticles); mid male tibia simple (figs 369-370).

Genitalia

Female: lfb/lo ca. 7 5, paraproct slightly longer than coxites (p/c = 1.04), bc1/lc1 ca. 4.2, c1/c2 ca. 0.8, c3/c3-c4 ca 4.0, c4-c3/c1 ca. 0.2.

Male: lmb/la ca. 10.4, lbp/lap ca. 2.4

Sexual dimorphism

Male body more slender than female (male. el/eb = 1 50-1.61, female el/eb = 1 31-1.40).

Structure of legs (figs 367-370) and elytron (figs 365-366)

Distribution (map 14)

MADAGASCAR OUEST: – Lac Tsimanampetsotsa, 1969 (*J VADON/A PEYRIERAS*). – Lambomakandro, 1956 (*C KOCH*) – Lambomakandro, 1957 (*P A ROBINSON*) – Forêt de Lambomakandro, Sakaraha, 1958 (*P GRIVEAUD*). – Est de Sakaraha, forêt du Zombitsy, Matsabory, 1974 (*P. VIETTE/A. PEYRIERAS*). – 11 km east of Sakaraha, 1991 (*L. BARTOLOZZI/ S. TAITI/C. RAHARIMINA*).

Biology

Period of adult appearance: I, II, III, V, VII.

Habitat: "Forest of Zombitsy", altitude: 500 m, 550 m, 640 m.

Styphacus decorsei Fairmaire, 1901

(Pl. 19, 20, figs 371-390, pl 31, fig 534; pl. 35, figs 565-566, map 14)

Styphacus Decorsii Fairmaire, 1901· 71.

Styphacus decorsei: Gebien, 1910 308, 1938· 411, Iwan, 1996: 431, 2002a: 103, 2002b: 304, 2004: 406; Ferrer, 1998· 358.

Source · MNHN, Paris

Melanocratus amplicollis Fairmaire, 1902: 329 Gebien, 1910. 307, 1938· 411; syn par Iwan, 1996· 431.

Melanocratus convexicollis Fairmaire, 1902: 330 – Gebien, 1910· 307, 1938· 411; syn. par Iwan, 1996. 431

Types

Styphacus Decorsii Fairmaire, 1901

– Lectotype. male, designated by IWAN (1996), "15 au 30 janv 01/Muséum Paris, Madagascar, Androy, embouchure du Manambovo, Dr J Decorse 1901/Styphacus decorsii Fm." (MNHN).

– Paralectotypes: "Muséum Paris, 1906 Coll. Léon Fairmaire/Madagascar/Plateau de l'Androy Rég d'Ambovombe/type", 1 ♂ (MNHN); "Muséum Paris, 1906 Coll Léon Fairmaire/L. Fairmaire *det* 1903/*Melanocratus decorsii* Fm./15 au 30 nov. (19)00/ Muséum Paris, Madagascar, Région de l'Androy, Ambovombe, Dr J. Decorse 1901", 1 ♂ (MNHN); "15 au 30 janv. 01/Muséum Paris, Madagascar, Région de l'Androy, Ambovombe, Dr J. Decorse, 1901, *Styphacus decorsei* Fm ", 1 ♂, 2 ♀♀ (MNHN); "Fév. 1901/Muséum Paris, Madagascar, Androy, Haut Manamboro, Ambatomaiky, Dr J. Decorse, 1901", 2 ♂♂ (MNHN); "Muséum Paris, 1906 Coll. Léon Fairmaire/ *Styphacus decorsii* Fm /15 au 30 janv. 01/Muséum Paris, Madagascar, Région de l'Androy, Ambovombe, Dr J. Decorse 1901", 2 ♂♂ (MNHN).

Melanocratus amplicollis (Fairmaire, 1902)

– Lectotype female, designated by IWAN (1996), "Muséum Paris, 1906 Coll. Léon Fairmaire/*Melanocratus amplicollis*/Type/du 15 au 30 déc. 1900/Muséum Paris, Madagascar, Région de l'Androy, Ambovombe, Dr J. Decorse, 1901" (MNHN).

– Paralectotype "Muséum Paris, 1906 Coll Léon Fairmaire/*Melanocratus amplicollis*/ Type/Plateau de l'Androy Rég. d'Ambovombe", 1 ♀ (MNHN).

Melanocratus convexicollis Fairmaire, 1902

– Holotype: female, "Muséum Paris, 1906 Coll. Léon Fairmaire/*Melanocratus convexicollis*/ Type/Madagascar Sud, Andrahomana, Alluaud, XI 1900" (MNHN).

Measurements

Body length 19.0-29.0 mm, pl/pb = 0 66-0 71, el/eb = 1.42 1 61, el/pl = 2 32 2.57, eb/pb = 1.08-1.14; clypeus – ew/ed ca 2 7; antenna – al/apl ca 0 7, al/was3 ca. 13 0, as3/as2 ca. 4.0; maxillary palp – mp/as3 ca 0.9, scutellum – pkp/st ca. 2.1, metasternum – cavl/metl ca. 1.4, metepisternum – ml/mw ca. 3.4; legs – tars1/2 ca. 2.3, ftibl/ftibw ca 3.0, dtk/dod ca. 3.3, ffeml/ffemw ca. 4.4, abdomen – pav/pm ca. 2.1.

Diagnostic characters

Head (fig. 371). Genal canthus as wide as eye; mentum as in fig. 372.

Pronotum with regular angles, anterior angles moderately protruding frontwards (pl/lapa ca. 8); border of lateral margin wide (bp/lbp ca. 30), distinctly narrowed medially (bp/lbp ca. 60); hypomeron depressed near lateral margins (fig 373).

Elytral base bordered (fig. 374), anterior margin slighty protruding frontwards , apex simple.

Prosternum. Prosternal process blunt, apical border interrupted.

Mesosternal process flat, lateral margins strongly convex (fig 377).

Male legs Fore tarsi slightly widened; glossy median groove present on tarsomeres as follows, male: fore – 4-5, mid and hind – all; fore tibia in both sexes with 2 denticles (apical

Source : MNHN, Paris

and med'an); fore male tibia strongly bent inside (figs 378 379), female as in figs 380-381; mid tibia in both sexes with 2 dentated ridges (figs 382-385), hind male tibia robust (figs 386-387), hind male femora with denticle inside (figs 388-389).

Male abdominal ventrite 1 slightly convex.

Genitalia

Female (fig. 390). lfb/lo ca. 6.8, paraproct longer than coxites (p/c ca. 1.2), tc/2bc1 ca 0.8, bc1/lc1 ca. 2.6, c1/c2 ca. 0 8, c3/c3-c4 ca. 5 0, c4-c3/c1 = 0.12.

Male: lmb/la = 7.6, lbp/lap = 2.4

Sexual dimorphism

Male body more slender than female (male: el/eb = 1.51-1.61, female· el/eb = 1.42-1 47).

Structure of legs (figs 380-389), abdomen and elytron

Distribution (map 14)

MADAGASCAR EST: – Andrahomana, entre Fort-Dauphin et .e cap Sainte-Marie, 1926 (*R. DECARY*) – Andrahomana, 1900 (*CH. ALLUAUD*).

MADAGASCAR SUD. – Amboasary, 1979 – Ampotaka, 1919. – Androka, Prov. de Tuléar [= Toliara], 1913 (*Lieutenant GAUDRON*). – Androy, embouchure du Manambovo, 1901 (*J DECORSE*). – Androy, Haut Manambovo, Ambatomaiky, 1901 (*J. DECORSE*) – Anjahantelo, Amboasary, 1969 (*J VADON/A. PEYRIERAS*). – Antanimora, Ambovombe Distr., 1956 (*C KOCH*). – Plateau de l'Androy, Rég. d'Ambovombe. – Beloha, District de Tsihombe, 1919 (*Lieutenant DECARY*). – Berenty, Amboasary Sud, 1981 (*A. PEYRIERAS*) – Ifotaka, Amboasary, 1957 (*J. E. RANDRIAMASY*)

Biology

Period of adult appearance: I, III, V, VI, XI, XII

Styphacus drugmandi Iwan, 2004

(Pl. 20, figs 391-404; pl 35, fig. 567, map 14)

Styphacus drugmandi Iwan, 2004: 410.

Holotype

Male, "Coll. R.I.Sc.N.B., Madagascar Sud, Beloha" (IRSN)

Paratypes

67 paratypes, "Coll R.I.Sc.N.B., Madagascar Sud, Beloha" (IRSN).

Measurements

Body length 21.7-28.6 mm, pl/pb – 0.64-0.68, el/eb = 1 39-1.64, el/pl = 2.50-2.68, eb/pb = 1 06-1.18; clypeus – ew/ed = 2.3-2.8, antenna – al/apl = 0.70-0.75, al/was3 = 12 0-14 0, as3/as2 = 3 0-3.3; max'llary palp – mp/as3 ca. 1.0, scutellum - pkp/st = 1 9-2.0; metasternum – cavl/metl = 1 5-2 0, metepisternum ml/mw = 3 8 4 5; legs – tars1/2 = 1.8-2.0, ftibl/ftibw = 2.3-2.6, dtk/dod = 3 0-3 9, ffeml/ffemw = 3 0-3 3, abdomen – pav/pm = 2.0-2.3.

Diagnostic characters

Body elongated, surface slightly shiny.

Source : MNHN, Paris

Head Genal canthus as wide as eye.

Pronotum with regular angles, anterior angles moderately protruding frontwards (pl/lapa = 6.5-8.5); border of lateral margin moderately wide (bp/lbp ca. 40), distinctly narrowed medially (bp/lbp ca. 65), hypomeron depressed near lateral margins.

Elytral base bordered, anterior margin slightly protruding frontwards , apex simple (figs 403-404).

Prosternum. Prosternal process blunt, apical border interrupted.

Mesosternal process flat, lateral margins strongly convex.

Male legs. Fore tarsi slightly widened; glossy median groove present on tarsomeres as follows, male: fore – 4-5, mid and hind – all, fore tibia in both sexes with 2 denticles (apical and median) (figs 393-394), fore male tibia strongly bent inside (figs 391-392); mid tibia in both sexes with 2 dentated ridges (figs 395-398), hind male tibia robust (figs 399-400); hind male femora with denticle inside (figs 401-402).

Male abdominal ventrite 1 slightly convex.

Genitalia

Female: lfb/lo = 6 7-7 0, paraproct longer than coxites (p/c = 1.10-1.15), tc/2bc1 ca. 0.8, bc1/lc1 ca 2.8, c1/c2 = 0 8-0.9, c3/c3-c4 = 3.5-4.0, c4-c3/c1 ca. 0.20.

Male: lmb/la = 8.3-8.5, lbp/lap ca. 2.6.

Sexual dimorphism

Male body more slender than female (male: el/eb = 1 57-1.65, female: el/eb = 1 35-1.42).

Structure of legs (figs 391-402), abdomen and elytra.

Distribution (map 14)

Madagascar Sud: – Beloha.

Styphacus girardi Iwan, 2004

(Pl. 21, figs 405-420; pl. 35, fig. 568, map 14)

Styphacus girardi Iwan, 2004. 410.

Holotype

Male, "Coll. R.I.Sc.N.B., Madagascar Sud, Beloha" (IRSN).

Paratypes

16 paratypes, "Coll. R.I.Sc.N.B., Madagascar Sud, Beloha" (IRSN).

Measurements

Body length 22 0-25.0 mm, pl/pb = 0.60-0.66, el/eb = 1 35-1 55, el/pl = 2.50-2.67, eb/pb = 1 08-1.18; clypeus – ew/ed – 2 5-3 0, antenna – al/apl = 0.65-0 70, al/was3 = 11.5-13.5, as3/as2 = 3.0-3.5; maxillary palp – mp/as3 ca. 1.0, scutellum – pkp/st = 1.7-1 9; metasternum – cavl/metl = 1 5-1 8; metepisternum – ml/mw = 4.0-4.5, legs – tars1/2 = 1 8-2.4, ftibl/ftibw = 2.2-2.9, dtk/dod = 3 5-4 5, ffeml/ffemw = 3 0-3.2; abdomen – pav/pm = 2.0-2.3.

Source : MNHN, Paris

Diagnostic characters

Body elongated, surface shiny

Head Genal canthus as wide as eye

Pronotum with regular angles, anterior angles moderately protruding frontwards (pl/lapa = 7.0-10 0); border of lateral margin moderately wide (bp/lbp ca. 40), distinctly narrowed medially (bp/lbp ca 75); hypomeron depressed near lateral margins.

Elytral base bordered; anterior margin slightly protruding frontwards; apex simple.

Prosternum evenly convex, prosternal process blunt, apical border interrupted

Mesosternal process flat, lateral margins strongly convex.

Male legs. Fore tarsi slightly widened, glossy median groove present on tarsomeres as follows, male. fore – 4-5, mid and hind – all, fore tibia in female with 2 denticles (apical and median) (figs 407-409), fore male tibia strongly bent inside (figs 405-406); mid tibia in both sexes with 2 dentated ridges (figs 410-413); hind male tibia robust (figs 414-415); hind male femora without denticle inside (figs 416-417).

Male abdominal ventrite 1 slightly convex.

Genitalia

Female (fig. 420): lfb/lo = 7 2-7 5, paraproct longer than coxites (p/c = 1 15-1.20), tc/2bc1 = 0 7-0.9, bc1/lc1 = 3.0 3.6, c1/c2 = 0.6-0.7, c3/c3-c4 ca 3 0, c4-c3/c1 = 0 15-0 25.

Male (figs 418-419): lmb/la = 8.0-9.3, lbp/lap = 2.2.

Sexual dimorphism

Male body more slender than female (male. el/eb = 1 51-1.55, female el/eb = 1.35-1.40).

Structure of legs (figs 407-417) and abdomen.

Distribution (map 14)

MADAGASCAR SJD: – Beloha

Styphacus iwani Ferrer, 2002

(Pl. 21, 22, figs 421-431, map 14)

Styphacus iwani Ferrer, 2002: 379. – Iwan, 2004: 412

Holotype

Male, "S-Madagascar fra Aspanihy (probably. Ampanihy) e Beloha (20 km da Beloha), 22 V.1991 – bush/*Legit* L Bartolozzi, S Taiti, B. Raharimina (n Mag. 1107)" (MZUF).

Note

The present description included new data based on the specimen (female) from the Transvaal Museum in Pretoria (TMNH) "Madagascar, I. 1956, C Koch *leg* /Marovato, Ambovombe distr.".

Measurements

Body length 12.9-13.1 mm, pl/pb = 0.74-0.75, el/eb = 1.36-1.43, el/pl = 2.07 2.18, eb/pb = 1.12-1.15; clypeus – ew/ed ca 3 0; antenna – al/apl ca 0.8, al/was3 ca 13 6,

Source : MNHN, Paris

as3/as2 ca 3.0; maxillary palp – mp/as3 ca. 1 3; scutellum – pkp/st ca 2.4, metasternum – cavl/metl ca 1.9; metepisternum – ml/mw ca. 4.0, legs – tars1/2 ca. 1.9, ftibl/ftibw ca. 2.7, dtk/dod ca. 3 3, ffeml/ffemw ca. 3.0; abdomen – pav/pm ca. 2.2.

Diagnostic characters

Head (fig 421). Genal canthus as wide as eye

Pronotum with regular angles, anterior angles moderately protruding frontwards (pl/lapa ca. 9), border of lateral margin moderately wide (bp/lbp ca. 40), distinctly narrowed medially (bp/lbp ca. 65)

Elytral base bordered, anterior margin slightly protruding frontwards, apex simple (figs 422-423).

Prosternal process blunt, apical border interrupted.

Mesosternal process with shallow median groove (fig. 424)

Male legs. Fore tarsi slightly widened; glossy median groove present on tarsomeres as follows, male· fore – 3-5, mid and hind all; fore tibia in both sexes with 2 denticles (apical and median) (male, as in figs 425-426); male mid tibia emarginate at base (figs 427-428), in both sexes with 2 dentated ridges; hind male tibia robust (figs 429-430).

Genitalia

Female (fig 431): lfb/lo = 9.1, paraproct shorter than coxites (p/c = 0 9), tc/2bc1 = 0.7, bc1/lc1 = 3 1, c1/c2 = 0.8, c3/c3-c4 = 3.1, c4-c3/c1 = 0.1.

Male. lmb/la = 8.6, lbp/lap = 2.5.

Sexual dimorphism

Male body more slender than female (male: el/eb = 1 43, female. el/eb = 1.36).

Structure of legs (figs 425-430) and elytra.

Distribution (map 14)

MADAGASCAR SUD. – Aspanihy, 20 km da Beloha, 1991 (*L. BARTOLOZZI/ S. TAITI/B. RAHARIMINA*). – Marovato, Ambovombe Distr., 1956 (*C. KOCH*).

Biology

Period of adult appearance: I, V.

Habitat: "bush".

Styphacus kochi Iwan, 1996

(Pl 22, 23, figs 432-449; pl 28, fig. 530; pl. 35, figs 569-570, map 14)

Styphacus kochi Iwan, 1996· 447. – Iwan, 2002a: 103, 2002b. 305, 2004. 412.

Holotype

Male, "Madagascar, I. 1956, C. Koch *leg* /Itampolo, Ampanihy Distr."(HNHM)

Paratypes

"Muséum Paris; Madagascar Sud, plateau Mahafaly, 11/12 km. Ouest d'Ankalirano, 250 m 14/17. I. 1974, P. Viette et A. Peyrieras", 5 ♂♂, 7 ♀♀ (MNHN); "Madagascar, I. 1956 C. Koch *leg.*/Itampolo, Ampanihy Distr.", 2 ♀♀ (HNHM).

Source · MNHN, Paris

Measurements

Body length 14.0-17 5 mm, pl/pb = 0.65-0.67, el/eb = 1.44-1.48, el/pl = 2.30-2 45, eb/pb = 1.06-1.08; clypeus ew/ed ca 2.5, antenna – al/apl ca 0 7, al/was3 ca 12 3, as3/as2 ca. 2.8; maxillary palp – mp/as3 ca 1.0; scutellum pkp/st ca. 2.9; metasternum – cavl/metl ca. 1.9; metepisternum – ml/mw ca. 2 8; legs – tars1/2 ca. 2 4, ftibl/ftibw ca 2 3, atk/dod ca. 2.8, ffeml/ffemw ca 3.1; abdomen – pav/pm ca 2.1.

Diagnostic characters

Head (fig 432). Genal canthus as wide as eye.

Pronotum with regular angles, anterior angles moderately protruding frontwards (pl/lapa ca. 10.8); border of lateral margin wide (bp/lbp ca. 27), distinctly narrowed medially (bp/lbp ca. 41) (fig 433).

Elytral base unbordered (fig. 434); anterior margin slightly protruding frontwards; apex simple (figs 435-436).

Prosternal process protuding towards mesosternum, apical border interrupted (fig 437)

Mesosternal process with shallow median groove (fig. 438)

Male legs. All tarsi in both sexes narrow; glossy median groove present on all tarsomeres, male fore tibia slender, widened at apex (figs 439-440), female fore tibia robust, smooth on outer margin (figs 441-442); male mid tibia simple (figs 443-444), male hind tibia as in figs 445-446, male hind femora with denticle inside (figs 447-448).

Genitalia

Female (fig. 449). lfb/lo ca. 7.0, paraproct longer than coxites (p/c ca. 1.2), tc/2bc1 ca. 0.7, bc1/lc1 ca. 3.1, c1/c2 ca. 0 8, c3/c3-c4 ca. 4.6, c4-c3/c1 ca. 0.3.

Male: lmb/la ca. 7.0, lbp/lap ca 1.9.

Sexual dimorphism

Male body more slender than female (male: el/eb = 1.44-1.46, female: el/eb = 1.47-1.48).

Structure of legs (figs 440-448) and elytra.

Distribution (map 14)

MADAGASCAR SUD: – Itampolo, Ampanihy Distr, 1956 (C. KOCH). – Plateau Mahafaly, 11/12 km À l'ouest d'Ankalirano, 250 m, 1974 (P. VIETTE/A. PEYRIERAS).

Biology

Period of adult appearance: I.

Habitat: altitude: 250 m

Styphacus neuter (Fairmaire, 1902)

(Pl. 23, figs 450-461; pl. 36, figs 571-572, map 14)

Melanocratus neuter Fairmaire, 1902: 330. – Gebien, 1938: 411.

Styphacus neuter: Iwan, 1996: 437, 2002a: 103, 2002b: 305, 2004: 412.

Lectotype

Male, designated by IWAN (1996), "Muséum Paris, coll Ch Alluaud; Madagascar Sud, Pays Androy Nord, Alluaud 1900, 26/*Melanocratus neuter*, type" (MNHN).

Source : MNHN, Paris

Paralectotypes

"Muséum Paris, coll. Ch Alluaud/Madagascar Sud, Pays Androy Nord, Alluaud 1900, 26, 1 ♂, 4 ♀" (MNHN)

Measurements

Body length 15.5-20.0 mm, pl/pb = 0.62-0.73, el/eb = 1.39-1.45, el/pl = 2.25-2.40, eb/pb = 1.07-1.14, clypeus – ew/ed ca. 2.5; antenna – al/apl ca. 0.6, al/was3 ca. 11.3, as3/as2 ca. 2.9, maxillary palp – mp/as3 ca. 1.0, scutellum – pkp/st ca. 2 6; metasternum – cavl/metl ca. 1.7, metepisternum – ml/mw ca. 3.1; legs – tars1/2 ca. 2 0, ftibl/ftibw ca. 2.8, dtk/dod ca. 5.4, ffeml/ffemw ca. 3.4; abdomen - pav/pm ca 2 3.

Diagnostic characters

Head Genal canthus as wide as eye.

Pronotum with regular angles, anterior angles moderately protruding frontwards (pl/lapa ca. 14.0); border of lateral margin moderately wide (bp/lbp ca. 48), distinctly narrowed medially (bp/lbp ca. 96) (fig. 450).

Elytral base bordered, anterior margin slightly protruding frontwards, apex with small process (fig. 451).

Prosternal process protruding towards mesosternum, apical border entire.

Mesosternal process with shallow median groove (fig. 452).

Male legs. All tarsi in both sexes narrow; glossy median groove present on all tarsomeres, male fore tibia slender, widened at apex (figs. 453-454), female fore tibia with denticles on outer margin (fig. 455); male mid tibia emarginate inside (fig. 456); male hind tibia as in figs 457-458; male hind femora with denticle inside (figs 459 460).

Genitalia

Female (fig. 461): lfb/lo ca 7.1, paraproct shorter than coxites (p/c = 0 9), tc/2bc1 ca. 0.8, bc1/lc1 ca. 3.3, c1/c2 ca. 0.8, c3/c3-c4 ca 3 6, c4-c3/c1 ca. 0.1.

Male. lmb/la = 9.8, lbp/lap = 2.75.

Sexual dimorphism

Male body more slender than female (male. el/eb = 1.40-1.45, female: el/eb = 1.37-1.39).

Structure of legs (figs 453-460) and elytra.

Distribution (map 14)

MADAGASCAR EST: – Andrahomana, 1900 (*Ch. ALLUAUD*). Andrahomana, entre Fort-Dauphin et le Cap Sainte Marie, 1926 (*R. DECARY*)

MADAGASCAR OUEST: – S. O. d'Ankazoabo, 1972 (*A. PEYRIERAS*)

MADAGASCAR SUD: – Amboasary, 1987 (*P. & H. SCHULE*) – Androatsabo, S. E. de Tranomaro, 1971 (*A. PEYRIERAS*) Androy, Bas Mandrare de Behara à l'Otrokotroky, 1901 (*J. DECORSE*). – Pays Androy Nord (*CH. ALLUAUD*). – Behara, 1948 (*P A ROBINSON*).

Biology

Period of adult appearance: V, VIII, XII

Habitat: altitude: 400 m, 580 m.

Source : MNHN, Paris

Styphacus nimius Iwan, 1996

(Pl. 23, 24, figs 462-477; pl. 36, figs 573-574, map 14)

Styphacus nimius Iwan, 1996: 440 – Iwan, 2002a: 103, 2002b: 305, 2004: 416.

Holotype

Male, "Muséum Paris/Madagascar Sud, S.E. de Tranomaro, Androatsabo 400 m., A. Peyrieras V-1972" (MNHN).

Paratypes

"Muséum Paris, coll. P. Ardoin 1978/2860/Institut scientifique Madagascar/Vohibory (Abadie)" 2 ♂♂, 1 ♀ (MNHN), 4 ♂♂, 2 ♀♀ (HNHM), "Muséum Paris, Madagascar S. E., Prov. de Farafangana, Midongy, du S. 600 A. 1,000 m. R. Decary 1926", 2 ♂ (MNHN); "S.o. Ctr. Madagascar, coll. T.M. Pretoria, Ljungqvist", 2 ♀♀ (HNHM); "Muséum Paris, Ill. 69 Anjahantelo - Amboasary, Madagascar Sud., Vadon & Peyrieras", 1 ♂, 3 ♀♀ (MNHN); "Madagascar Sud, S. E. de Tranomaro, Androatsabo, 400 m. Peyrieras, XII. 1971/Muséum Paris, Madagascar Est, mission CNRS RCP n. 225", 2 ♂♂, 1 ♀ (MNHN); "Muséum Paris/Madagascar Sud S.E. de Tranomaro Androatsabo 400 m. Peyrieras, V. 1971", 1 ♀ (MNHN); "déc. 1900 & janv. 01/Muséum Paris, Madagascar, Androy Sept, Imanombo, Cap Vacher 1901", 1 ♂ (MNHN), "20 juillet 1900/Muséum Paris, Madagascar, région de l'Androy, Ambovombe, Dr J. Decorse 1901", 1 ♂ (MNHN); "Muséum Paris/Madagascar-Sud, Fort Dauphin, Poste Adm. Tsivory, Marotsiraka, III-60 Randriamasy", 2 ♂♂, 1 ♀ (MNHN); "Muséum Paris, coll. P. Ardoin. 1978/V. 1948, Vohitsara, Betioky, S. Tuléar, Madagascar, *leg.* F. Pierre", 1 ♂, 1 ♀ (MNHN); "Muséum Paris, Madagascar, Androy, Mandrare moy, Mt. Ihara Dr J. Decorse 1901", 1 ♂, 1 ♀ (MNHN), "24 mai 1900/Muséum Paris, Madagascar, Androy Bas, Mandrare Riv., Otrokotroky, Dr J. Decorse 1901", 1 ♂ (MNHN), "23 mai 1900/Muséum Paris, Madagascar, Androy Bas, Mandrare de Behara, a l'Otrokotroky, Dr J. Decorse 1901", 1 ♂ (MNHN).

Measurements

Body length 13.8-16.0 mm, pl/pb = 0.62-0.72, el/eb = 1.37-1.49, el/pl = 2.19-2.27, eb/pb = 1.03-1.09; clypeus – ew/ed ca. 3.2; antenna – al/apl ca. 0.7, al/was3 ca. 12.0, as3/as2 ca. 3.1, maxillary palp – mp/as3 ca. 1.3; scutellum – pkp/st ca. 2.9; metasternum – cavl/metl ca. 1.8; metepisternum – ml/mw ca. 3.1, legs – tars1/2 ca. 2.1, ftibl/ftibw ca. 2.8, dtk/dod ca. 3.7, ffeml/ffemw ca. 3.0; abdomen – pav/pm ca. 2.1.

Diagnostic characters

Head. Genal canthus as wide as eye; mentum shape varied (figs 462-465).

Pronotum with regular angles, anterior angles distinctly protruding frontwards (pl/lapa ca. 9); border of lateral margin wide (bp/lbp ca. 28), distinctly narrowed medially (bp/lbp ca. 42) (fig. 466).

Elytral base bordered, anterior margin slightly protruding frontwards (fig. 467); apex simple (fig. 468).

Prosternal process protruding towards mesosternum, apical border entire.

Mesosternal process with median groove.

Male legs. All tarsi in both sexes narrow, glossy median groove present on all tarsomeres; male fore tibia slender, widened at apex (figs 469-470), female fore tibia with denticles on outer margin (figs 471-472), inner margin of male mid tibia emarginate (figs 473-474); male hind tibia as in figs 475-476.

Source : MNHN, Paris

Genitalia
Female (fig. 477). lfb/lo ca. 7.6, paraproct shorter than coxites (p/c = 0 86), tc/2bc1 ca 0 7, bc1/lc1 ca. 2.8, c1/c2 ca. 1.0, c3/c3-c4 ca. 3 5, c4-c3/c1 ca. 0.05.

Male: lmb/la = 8.3, lbp/lap = 1.88.

Sexual dimorphism
Male body more slender than female (male: el/eb = 1.45-1.49, female: el/eb = 1.37-1.40).

The structure of legs (figs 469-476) and elytra.

Distribution (map 14)
MADAGASCAR EST: – Midongy, Prov. de Farafangana, 1926 (*R. DECARY*).

MADAGASCAR OUEST: – Vohibory (*ABADIE*).

MADAGASCAR SUD: Ambovombe, Région de l'Androy, 1901 (*J. DECORSE*). – Androatsabo, S. E. de Tranomaro, 1972 (*A PEYRIERAS*). – Androy, Mandrare moy, Mt Ihara, 1901 (*J. DECORSE*). – Androy Bas, Mandrare Riv., Antanimora, 1956 (*C. KOCH*). – Otrokotroky, 1901 (*J. DECORSE*). – Ankahantelo, Amboasary, 1969 (*J VADON* et *A PEYRIERAS*) – Beloha; Imanombo, Androy, Cap Vacher, 1901. – Réserve Spéc. Beza Mahafaly, 1991 (*L. BARTOLOZZI/ S. TAITI/C. RAHARIMINA*) – Marotsiraka, 1960 (*J. E. RANDRIAMASY*) – Vohitsara, Betioky, S. Tuléar [= Toliara], 1948 (*F. PIERRE*).

Biology
Period of adult appearance: I, III, V, VII. XII.

Habitat· altitude: 150 m, 400 m, 600-1,000 m.

Styphacus pauliani Iwan, 2004
(Pl. 24, 25, figs 478-491; pl. 36, fig. 575, map 14)

Styphacus pauliani Iwan, 2004: 417.

Holotype
Male, "Madag. S.-E. Vondrozo 1921; Muséum Paris, 1952, coll. R Oberthür" (MNHN).

Measurements
Body length 11.6 mm, pl/pb = 0.73, el/eb = 1.45, el/pl = 2.13, eb/pb = 1.08, clypeus – ew/ed = 3.5, antenna – al/apl ca 0.8, al/was3 = 14 3, as3/as2 = 2.8; maxillary palp – mp/as3 = 1.3; scutellum – pkp/st = 3 2; metasternum – cavl/metl = 2.0, metepisternum – ml/mw = 3.6, legs – tars1/2 = 2 0, ftibl/ftibw = 2 9, dtk/dod = 4.0, ffeml/ffemw = 3.0, abdomen – pav/pm = 1.9.

Diagnostic characters (male)
Body elongate, surface slightly shiny

Head (fig. 478) Genal canthus as wide as eye, antenna as in fig 479; mentum slightly narrowed frontwards (fig. 480); maxillary palp slightly widened (fig. 481)

Pronotum with regular angles, anterior angles moderately protruding frontwards (pl/lapa ca 9 3); border of lateral margin moderately wide (bp/lbp ca. 40), distinctly narrowed medially (bp/lbp = 70) (fig 482).

Source : MNHN, Paris

Elytral base bordered, anterior margin slightly protruding frontwards (fig. 483); apex simple (figs 484-485).

Prosternum evenly convex; prosternal process blunt, apical border interrupted.

Mesosternal process flat

Male legs. All tarsi slightly widened, glossy median groove present as follows: fore - 4-5, mid and hind – all; fore tibia widened at apex, with 2 denticles (apical and median) (figs 486-487); mid tibia slightly emarginate inside (figs 488-489); male hind tibia robust (figs 490-491)

Genitalia

Male : lmb/la = 6.8, lbp/lap = 2.4

Distribution (map 14)

MADAGASCAR EST: – Vondrozo, 1921.

Styphacus phreneticus Iwan, 1996

(Pl 25, figs 492-507; pl. 36, figs 576-577, map 14)

Styphacus phreneticus Iwan, 1996· 435. – Iwan, 2002a. 103, 2002b 305, 2004. 419.

Holotype

Male, "III. 1969 , lac Tsimanampetsotsa, Madagascar S.-W., Vadon & Peyrieras" (MNHN)

Paratype

"III. 1969 , lac Tsimanampetsotsa, Madagascar S -W., Vadon & Peyrieras", 1 ♀ (MNHN)

Measurements

Body length 21.5-22 2 mm, pl/pb = 0.67 0 79, el/eb = 1.26-1.35 (elytra wide), el/pl = 2.27-2.44, eb/pb = 1 29-1.32 (pronotum narrow); clypeus strongly emarginate – ew/ed ca. 2.1; antenna – al/apl ca. 0 7, al/was3 ca. 12.50, as3/as2 ca 2.4, maxillary palp – mp/as3 ca 1.1, scutellum pkp/st ca 2 0, metasternum cavl/metl ca 1.5, metepisternum – ml/mw ca 3.5; legs – tars1/2 ca 1.3, ftibl/ftibw ca 2.9, dtk/dod ca 2 5, ffeml/ffemw ca. 3.7; abdomen – pav/pm ca. 1.9

Diagnostic characters

Head (fig. 492). Genal canthus as wide as eye.

Pronotum (fig. 493), anterior and posterior angles sharp, with small process on apex; anterior angles slightly protruding frontwards (pl/lapa ca. 12), border of lateral margin moderately wide (bp/lbp ca. 41), of even width along its whole length anterior to posterior angles; hypomeron depressed near lateral margins.

Elytral base bordered (fig. 494); anterior margin slightly protruding frontwards; apex simple (figs 495-496).

Prosternum. Prosternal process blunt, apical border interrupted.

Mesosternal process flat.

Male legs. Fore tarsi slightly widened; glossy median groove present on tarsomeres as follows, male· fore – 4-5, mid and hind all; fore tibia in both sexes with 2 denticles (apical

Source · MNHN, Paris

and median); male fore tibia slightly bent inside (figs 497 498), female as in fig. 499; mid tibia in both sexes with 2 dentated ridges on outer margin (figs 500 501), male mid tibia slightly emarginate, hind male tibia robust (figs 502-503); fore male femora as in figs 504 505, hind male femora with denticle inside (figs 506-507).

Male abdominal ventrite 1 slightly convex.

Genitalia

Female lfb/lo ca. 7 4, paraproct longer than coxites (p/c ca. 1.1), tc/2bc1 ca 0.8, bc1/lc1 ca. 2 7, c1/c2 ca. 0.6, c3/c3-c4 ca. 5.0, c4-c3/c1 = 0.3.

Male: lmb/la = 9.7, lbp/lap = 2.3.

Sexual dimorphism

Male body more slender than female (male el/eb = 1.35, female el/eb = 1.26).

Structure of legs (figs 497-507), abdomen and elytra.

Distribution (map 14)

MADAGASCAR SUD: – Lac Tsimanampetsotsa, 1969 (*J. VADON/A. PEYRIERAS*).

Biology

Period of adult appearance: III.

CLADISTICS

Table VII. Data matrix used in the cladistic analysis of the genus *Styphacus*, with *Doyenus uncus* as outgroup; (0, 1, 2) – character states; (-) – unknown data.

Species\character	**00**	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Doyenus uncus	0	0	0	0	1	1	0	0	0	1	0	0	0	0	2	2	0
Styphacus																	
bartolozzii	1	0	1	1	1	0	1	0	0	0	1	0	0	0	1	1	0
decorsei	1	0	1	1	0	1	1	0	1	1	0	0	0	1	1	0	0
drugmandi	1	0	1	1	0	1	1	0	1	1	0	0	0	1	1	0	0
girardi	1	0	1	1	0	1	1	0	1	1	0	0	1	0	1	0	0
iwani	1	0	1	1	0	1	0	1	1	1	0	1	1	0	1	1	1
kochi	1	1	1	1	1	1	0	1	0	0	0	0	0	0	1	1	0
neuter	1	0	1	1	1	0	0	1	0	0	1	1	0	1	1	1	1
nimius	1	0	1	1	1	0	0	1	0	0	1	1	1	0	1	1	1
pauliani	1	0	1	1	0	1	0	0	1	1	0	1	0	0	1	1	–
phreneticus	1	0	1	1	0	1	0	0	1	1	0	0	0	1	1	0	0

List of characters and character states

00 Pronotal base concave-arcuate emarginate: 0 – absent; 1 – present,

01. Border of anterior elytral margin (base): 0 – present; 1 – absent;

02. Elytral base arcuately convex frontwards between humer· 0 – absent; 1 – present;

Source · MNHN, Paris

03. Elytral epipleuron with longitudinal concavity: 0 – absent, 1 – present;
04. Prosternal process: 0 – blunt; 1 – protruding towards mesosternum,
05. Bordering of prosternal process: 0 – entire; 1 – interrupted;
06. Lateral margins of mesosternal process: 0 – flat; 1 – convex;
07. Mesosternal process: 0 – flat, 1 – with longitudinal groove;
08. All tarsomeres with glossy median groove underside. 0 – present; 1 – absent,
09. Outer margin of fore tibia. 0 – slightly widened or with small denticles, 1 – with large median denticle or distinctly bent inside;
10. Outer margin of female fore tibia. 0 – smooth; 1 – with few small denticles;
11. Inner margin of male mid tibia: 0 – simple; 1– emarginate at base;
12. Mid tibiae in both sexes: 0 – simple; 1 – emarginate apically;
13. Male hind femora: 0 – simple, 1 – with denticle inside;
14. Male hind femora 0 – flat, 1 – with concavity on inner side, 2 – concave and strongly bent inside,
15. Male abdominal ventrites: 0 – slightly convex; 1– flat; 2 – strongly convex;
16. Ovipositor, paraproct shorter than coxites: 0 – absent; 1 – present.

Source : MNHN, Paris

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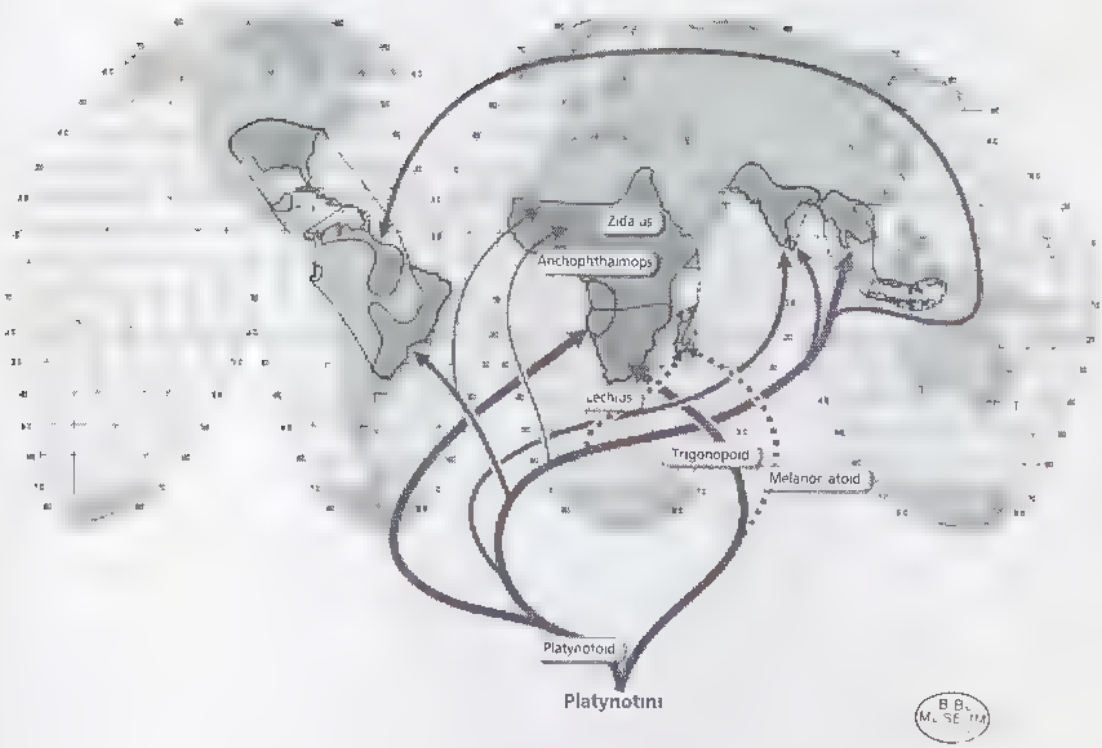


Map 1. World distribution of the subtribe Platynotina.

Source : MNHN, Paris

Map 2. Biodiversity areas in Madagascar
based on the occurrence of members of the melanocratoid group.

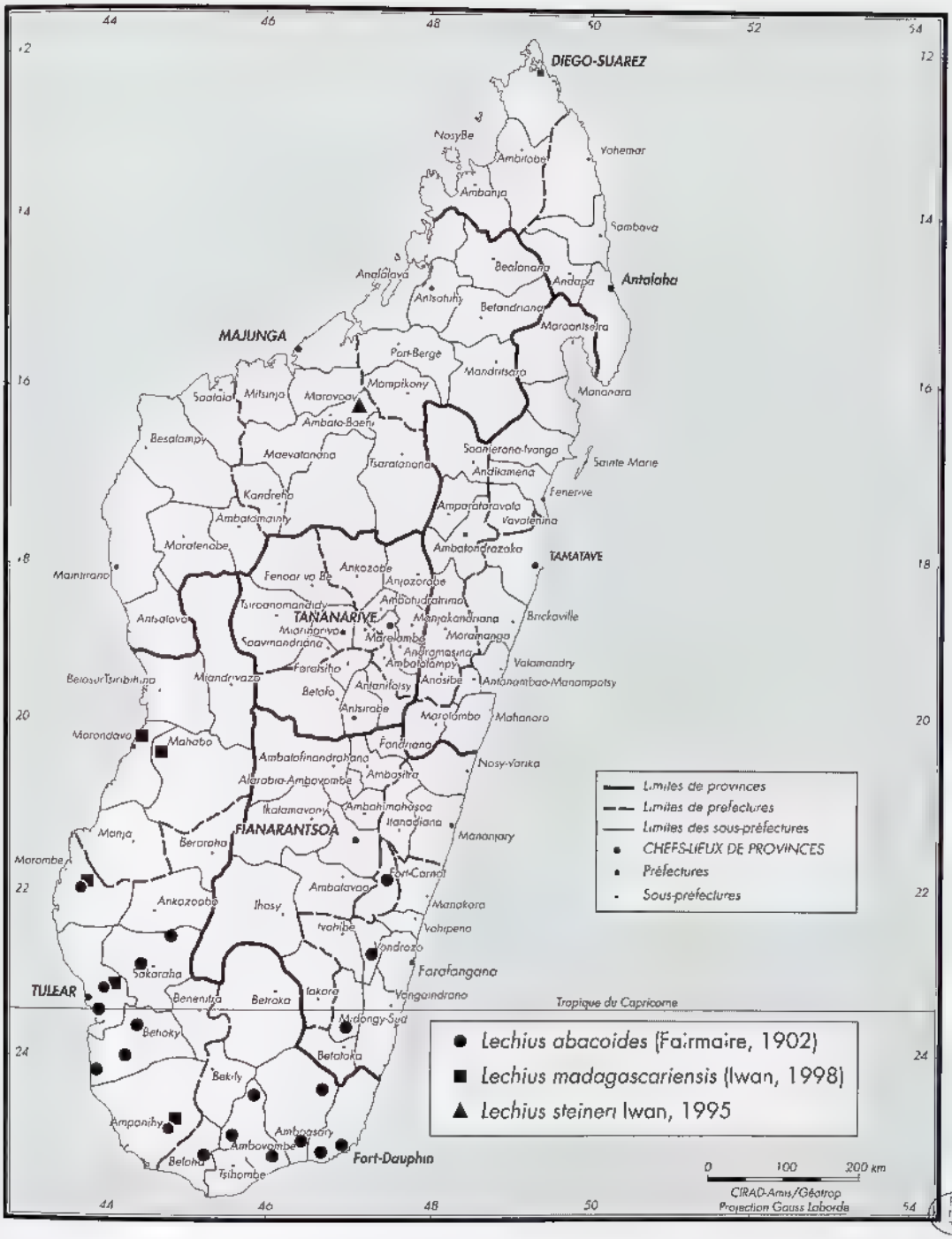
Source : MNHN, Paris

Map 3. Areas of endemism in Madagascar (A, B, C, D, E) based on the occurrence of members of the melanocratoid group.

Source : MNHN, Paris

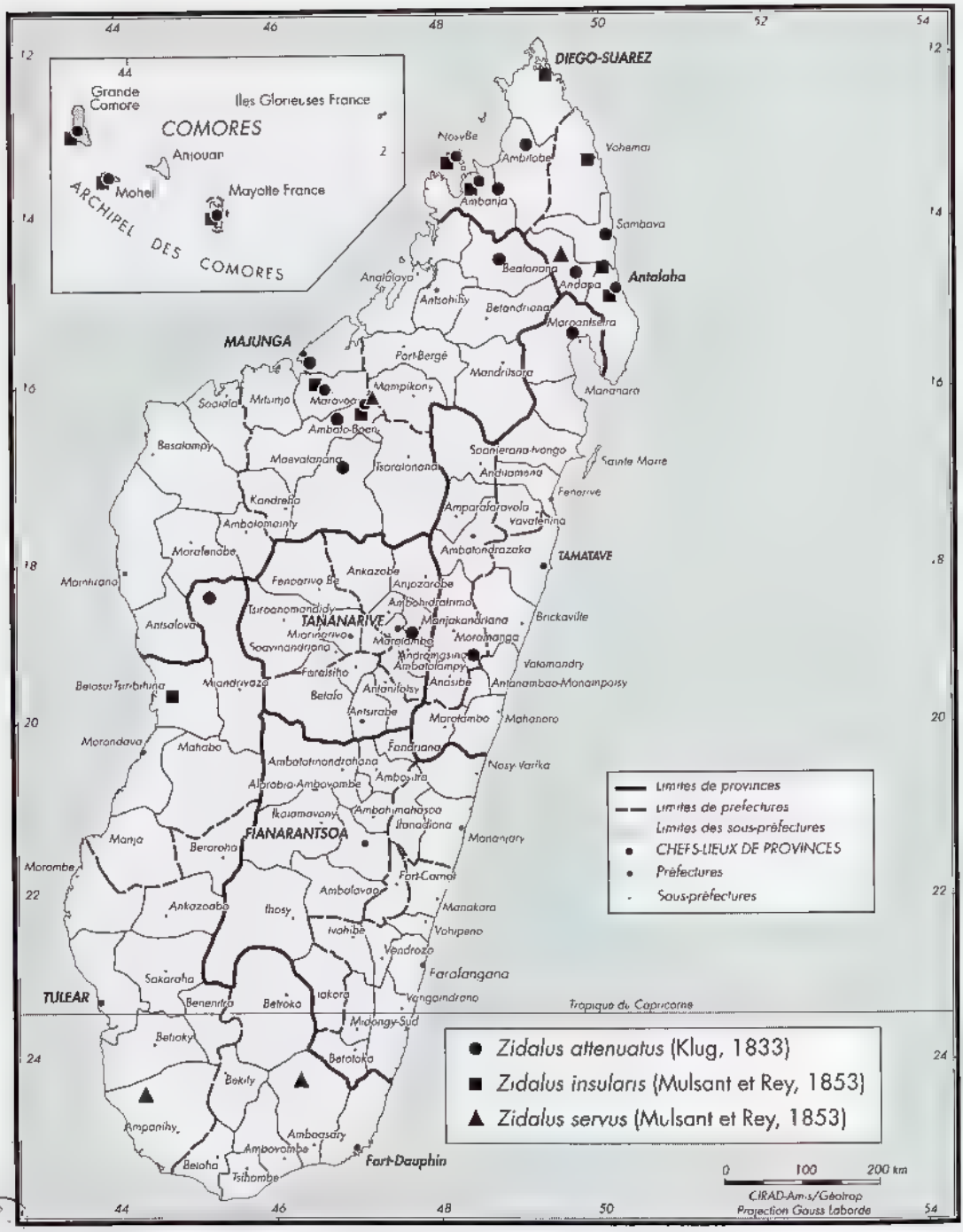
Map 4. Distribution of *Anchophthalmops menouxi* (Mulsant et Rey, 1853).

Source : MNHN, Paris



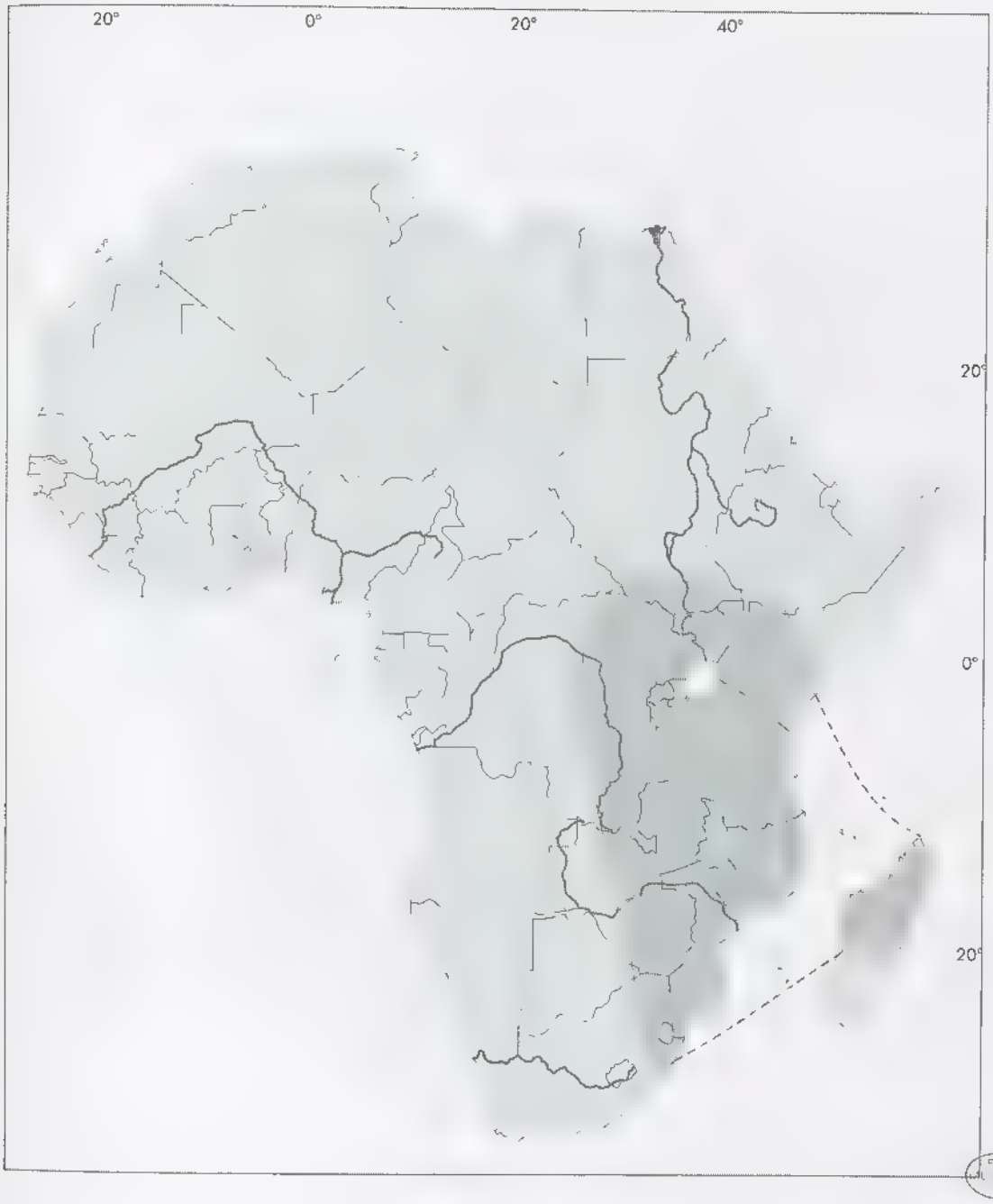
Map 5. Distribution of *Lechius abacoides* (Fairmaire, 1902); *Lechius madagascariensis* (Iwan, 1998) and *Lechius steineri* Iwan, 1995 in Madagascar.

Source : MNHN, Paris



Map 6. Distribution of *Zidalus attenuatus* (Klug, 1833); *Zidalus insularis* (Mulsant et Rey, 1853) and *Zidalus servus* (Mulsant et Rey, 1853) in Madagascar and Comoros.

Source : MNHN, Paris



Map 7. Distribution of *Zidalus attenuatus* (Klug, 1833).

Source : MNHN, Paris

Map 8. Distribution of *Zidalus insularis* (Mulsant et Rey, 1853).

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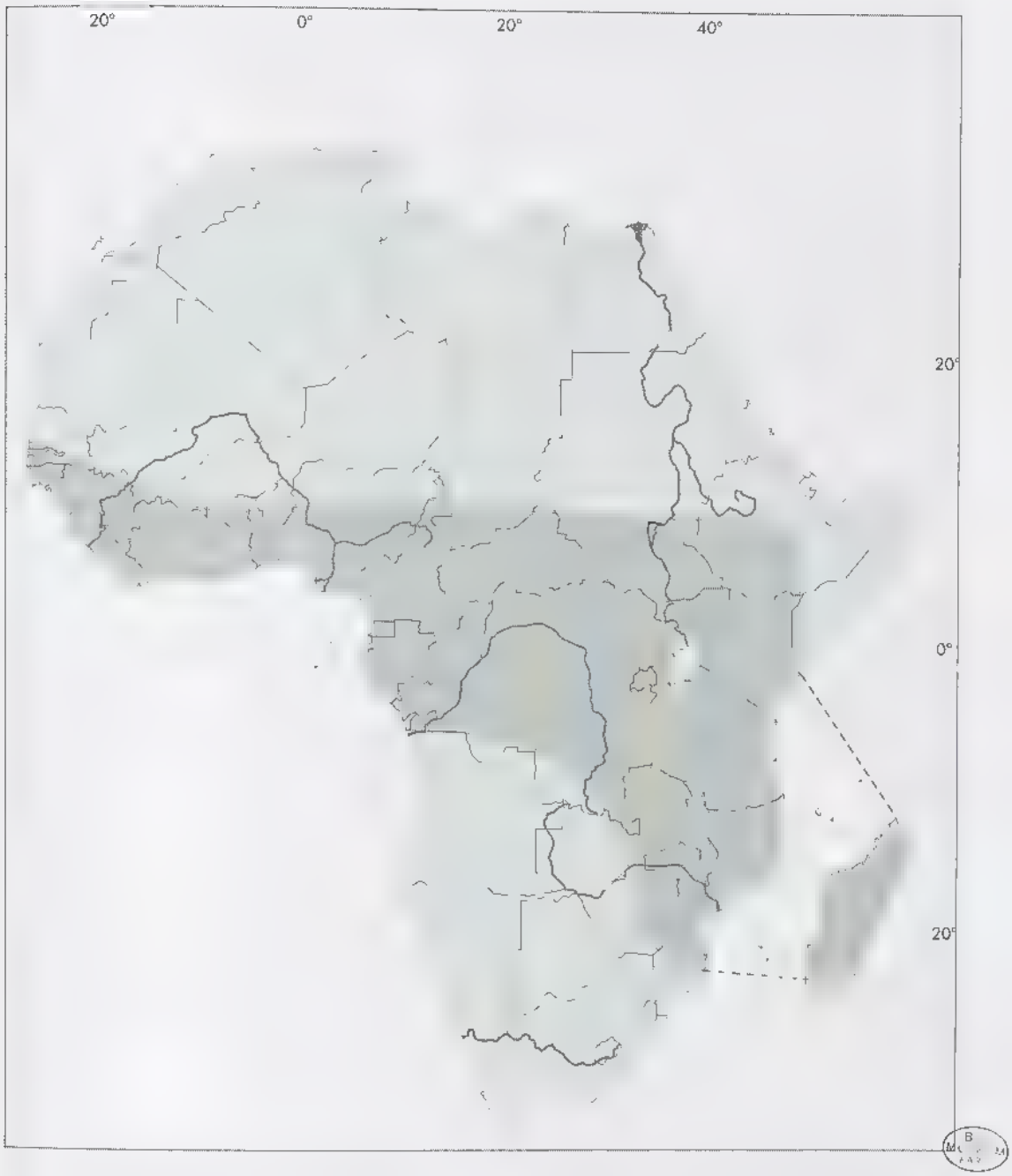
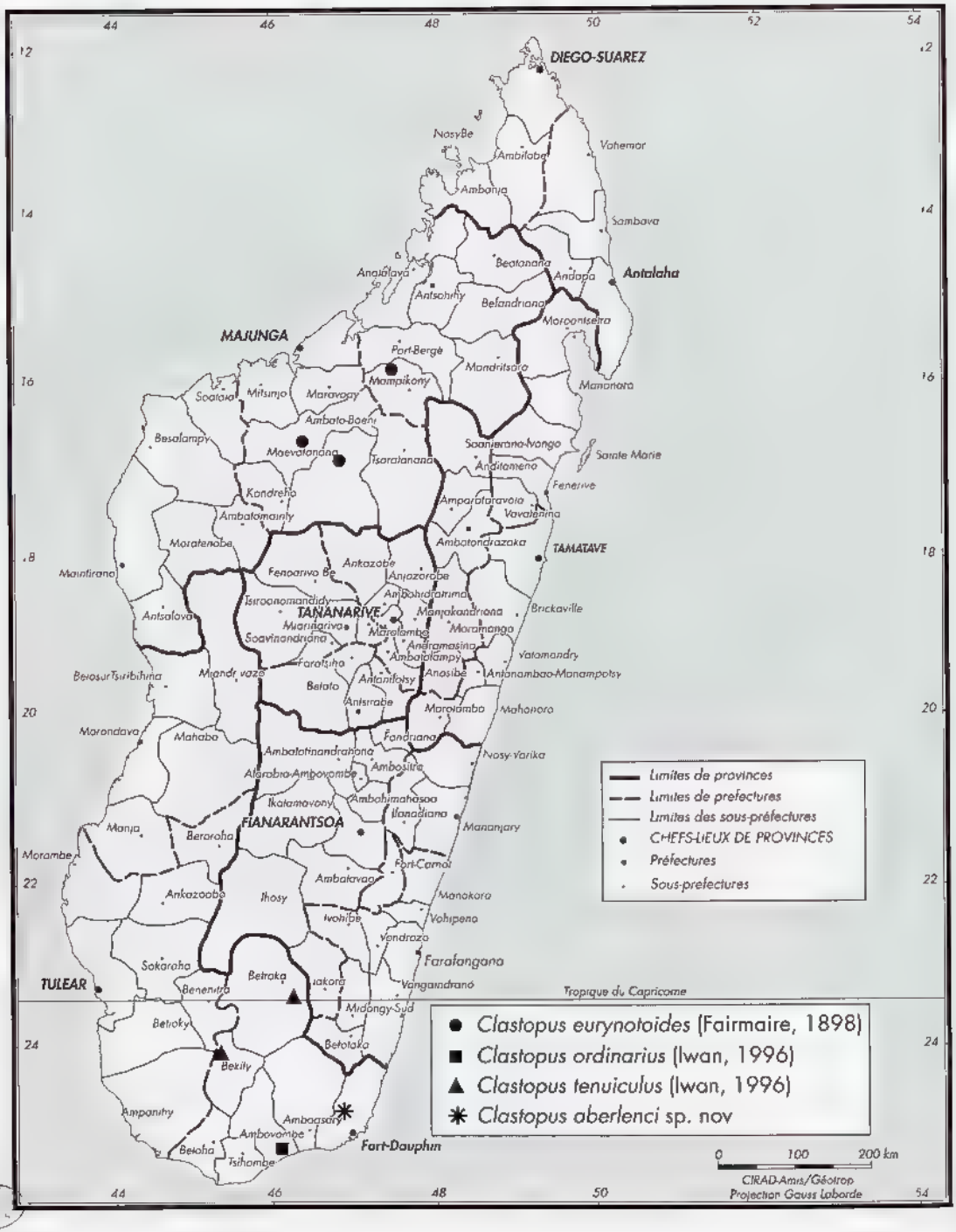
Source : MNHN, Paris



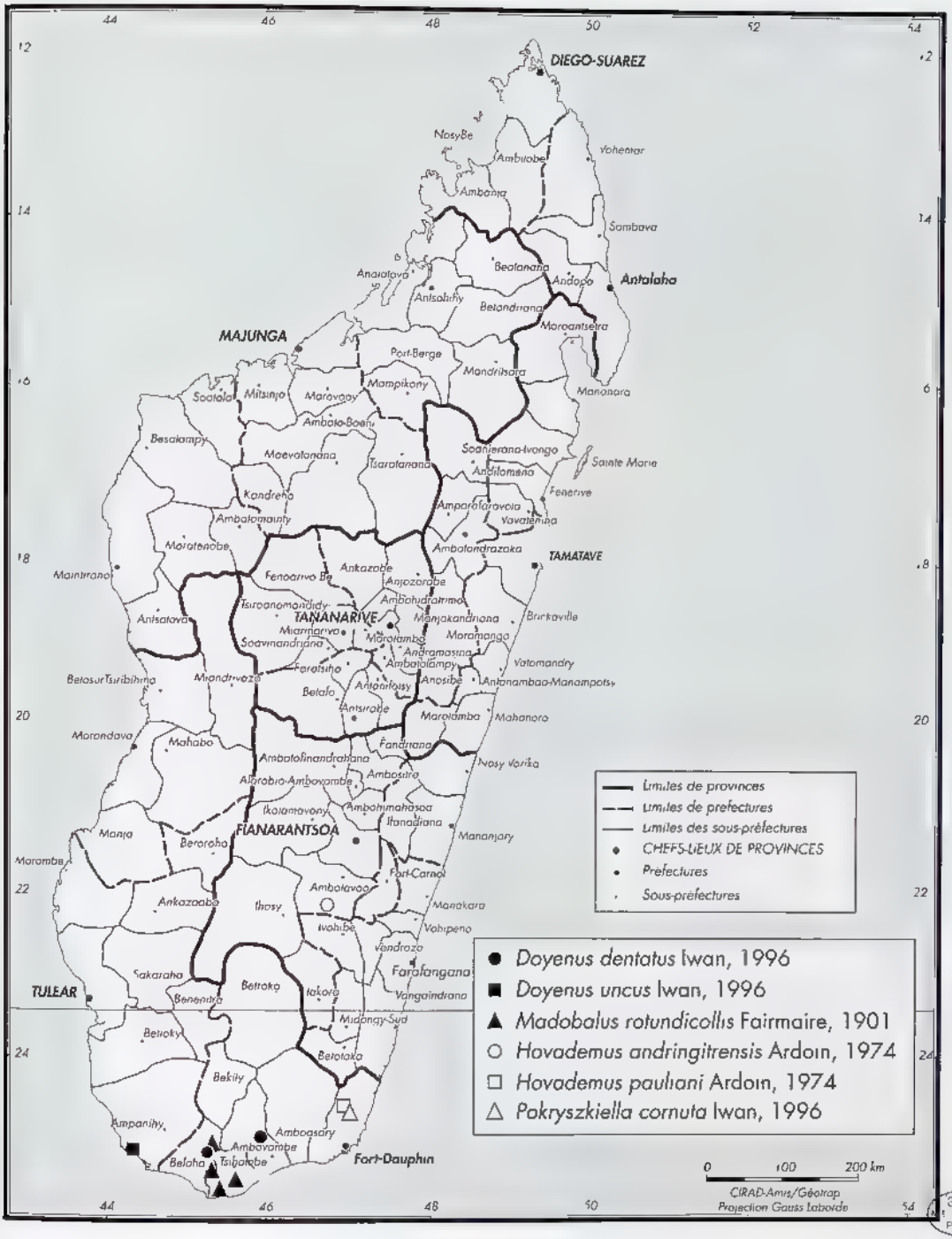
Map 9. Distribution of *Zidalus servus* (Mulsant et Rey, 1853).

Source : MNHN, Paris



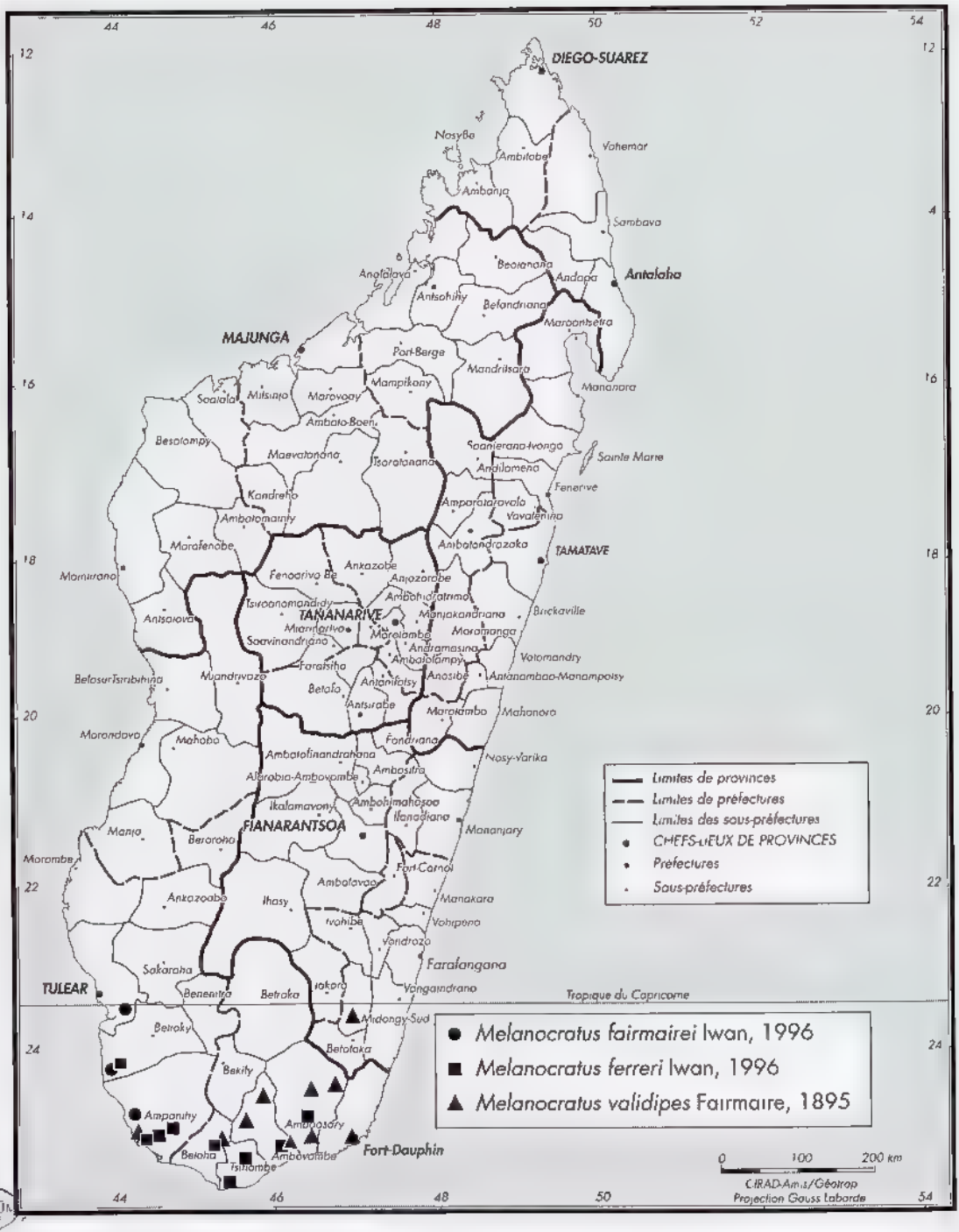
Map 10. Distribution of *Clastopus aberlenci* Iwan, 2005; *Clastopus eurynotoides* (Fairmaire, 1898); *Clastopus ordinarius* (Iwan, 1996) and *Clastopus tenuiculus* (Iwan, 1996) in Madagascar.

Dar usz MAN [redacted]
Source : MNHN, Paris



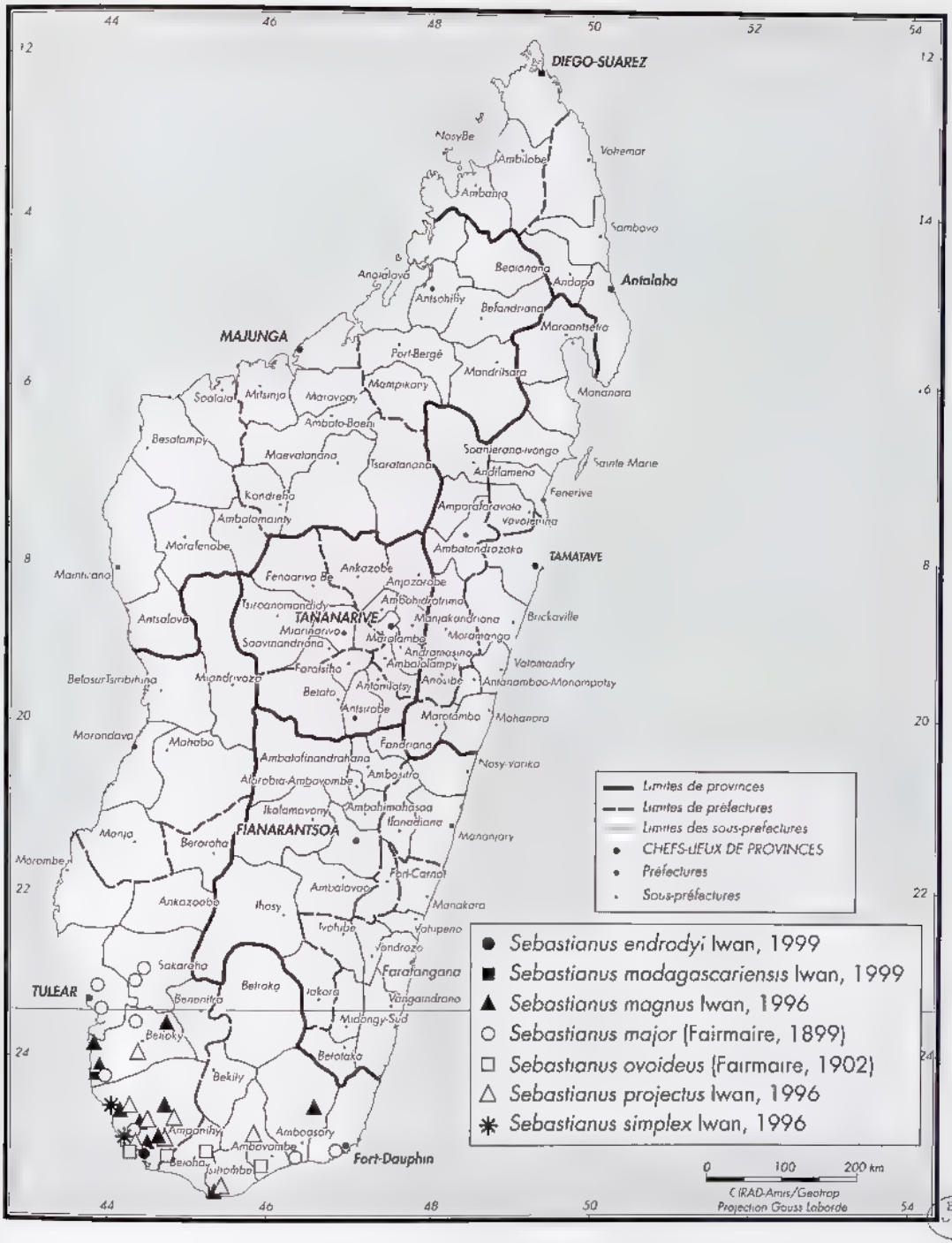
Map 11. Distribution of *Doyenus dentatus* Iwan, 1996; *Doyenus uncus* Iwan, 1996; *Hovademus andringitrensis* Ardoin, 1974; *Hovademus pauliani* Ardoin, 1974; *Madobalus rotundicollis* Fairmaire, 1901 and *Pokryszkiella cornuta* Iwan, 1996 in Madagascar.

Source : MNHN, Paris



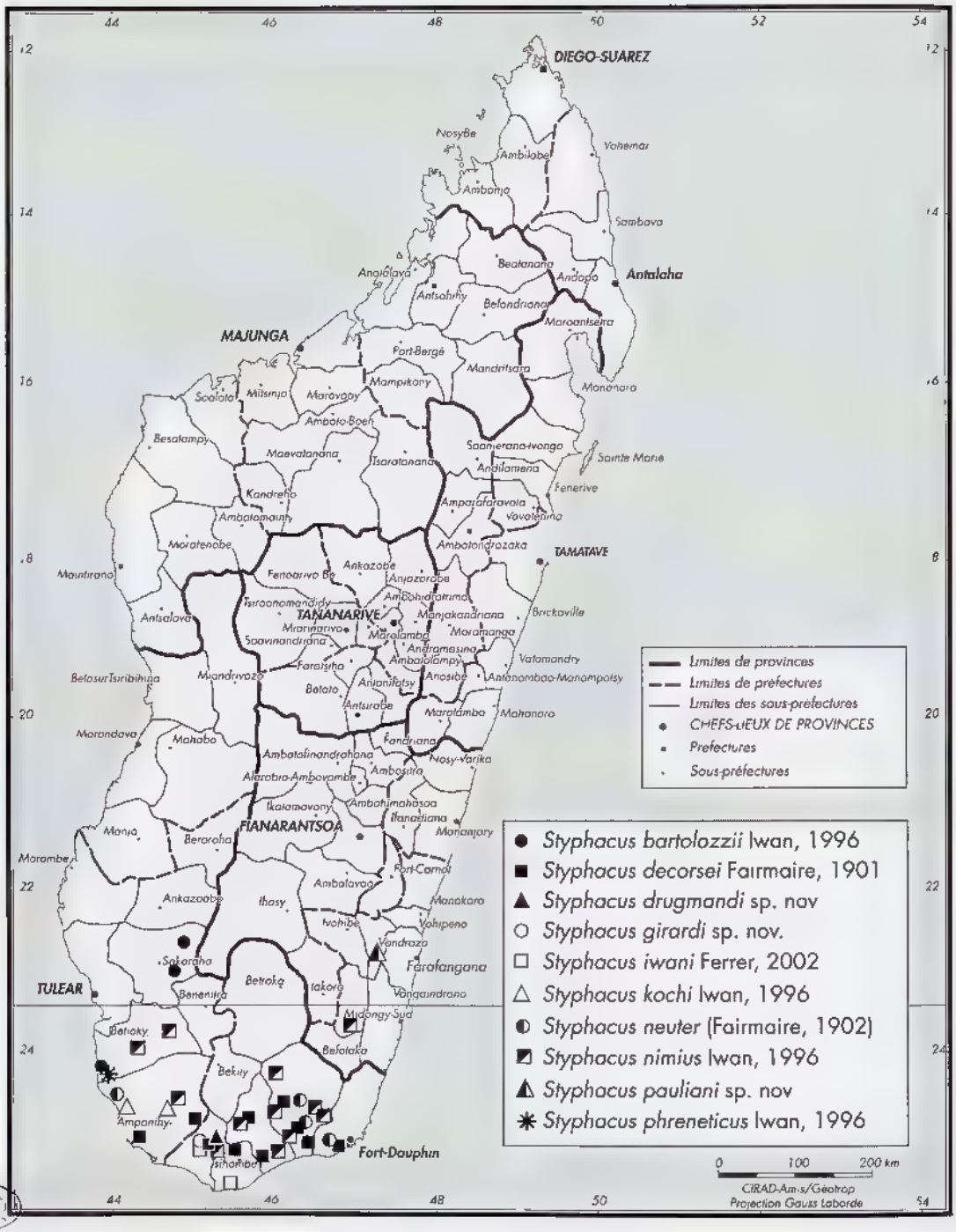
Map 12. Distribution of *Melanocratus fairmairei* Iwan, 1996; *Melanocratus ferreri* Iwan, 1996 and *Melanocratus validipes* Fairmaire, 1895 in Madagascar.

Dariusz WAN [redacted]
Source : MNHN, Paris



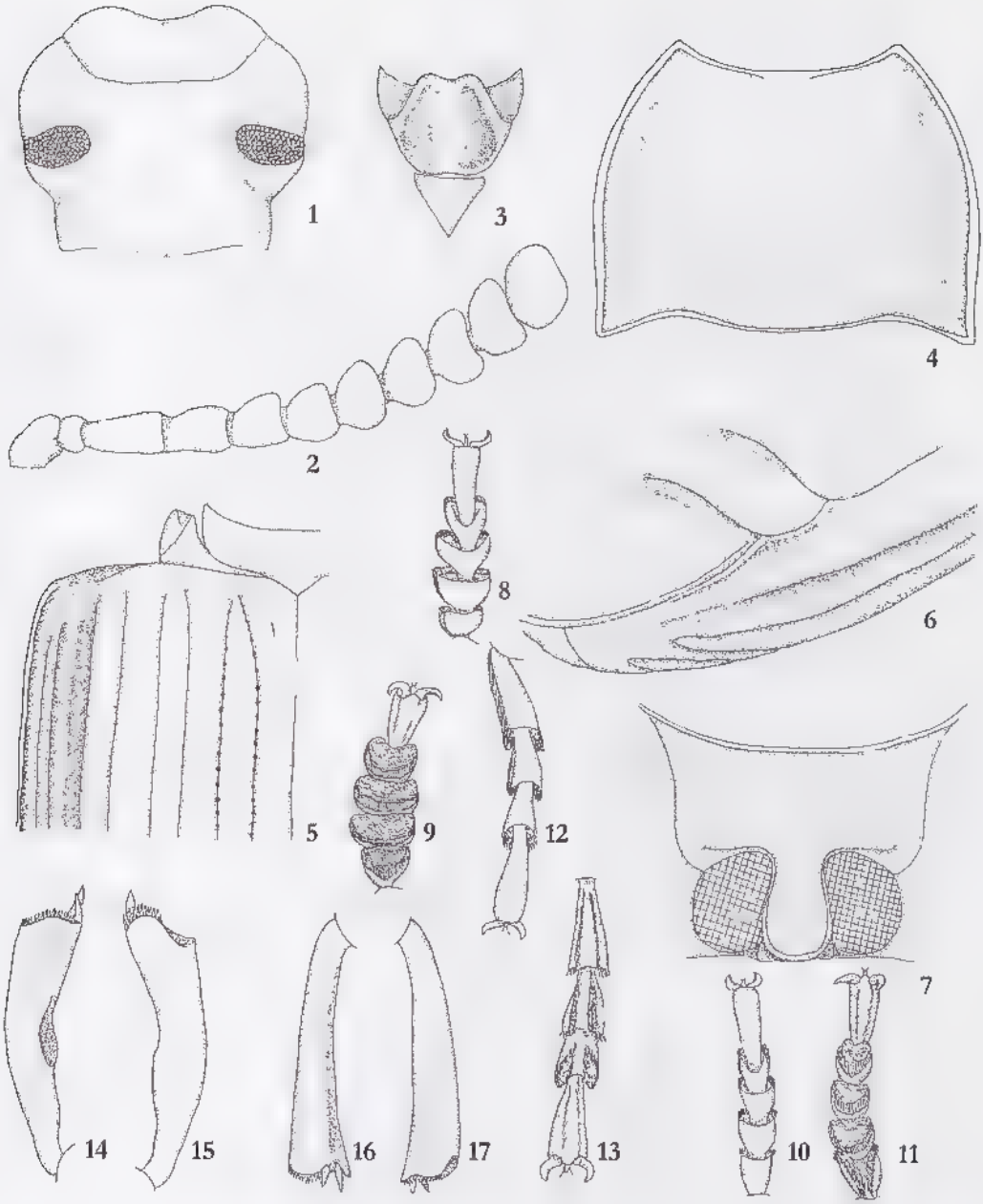
Map 13. Distribution of *Sebastianus endrodyi* Iwan, 1999; *Sebastianus madagascariensis* Iwan, 1999; *Sebastianus magnus* Iwan, 1996; *Sebastianus major* (Fairmaire, 1899); *Sebastianus ovoideus* (Fairmaire, 1902); *Sebastianus projectus* Iwan, 1996; *Sebastianus simplex* Iwan, 1996 in Madagascar.

Source : MNHN, Paris



Map 14. Distribution of *Styphacus bartolozzii* Iwan, 1996; *Styphacus decorsei* Fairmaire, 1901; *Styphacus drugmandi* Iwan, 2004; *Styphacus girardi* Iwan, 2004; *Styphacus iwani* Ferrer, 2002; *Styphacus kochi* Iwan, 1996; *Styphacus neuter* (Fairmaire, 1902); *Styphacus nimius* Iwan, 1996; *Styphacus pauliani* Iwan, 2004 and *Styphacus phreneticus* Iwan, 1996 in Madagascar.

Source : MNHN, Paris



B.B. MUSEUM

Plate 1. Figs 1-17: ***Anchophthalmops menouxi*** **(Mulsant et Rey, 1853).**
– 1: head. – 2: antenna. – 3: mentum and submentum.
– 4: pronotum. – 5: anterior part of elytron (base). – 6: apical part of elytron.
– 7: prosternum. – 8-9: male fore tarsus, dorsal and ventral views. – 10-11: male mid tarsus, dorsal and ventral views.
– 12-13: male hind tarsus, dorsal and ventral views. – 14-15: male fore tibia, ventral and dorsal views.
– 16-17: male mid tibia, ventral and dorsal views. .

Source : MNHN, Paris

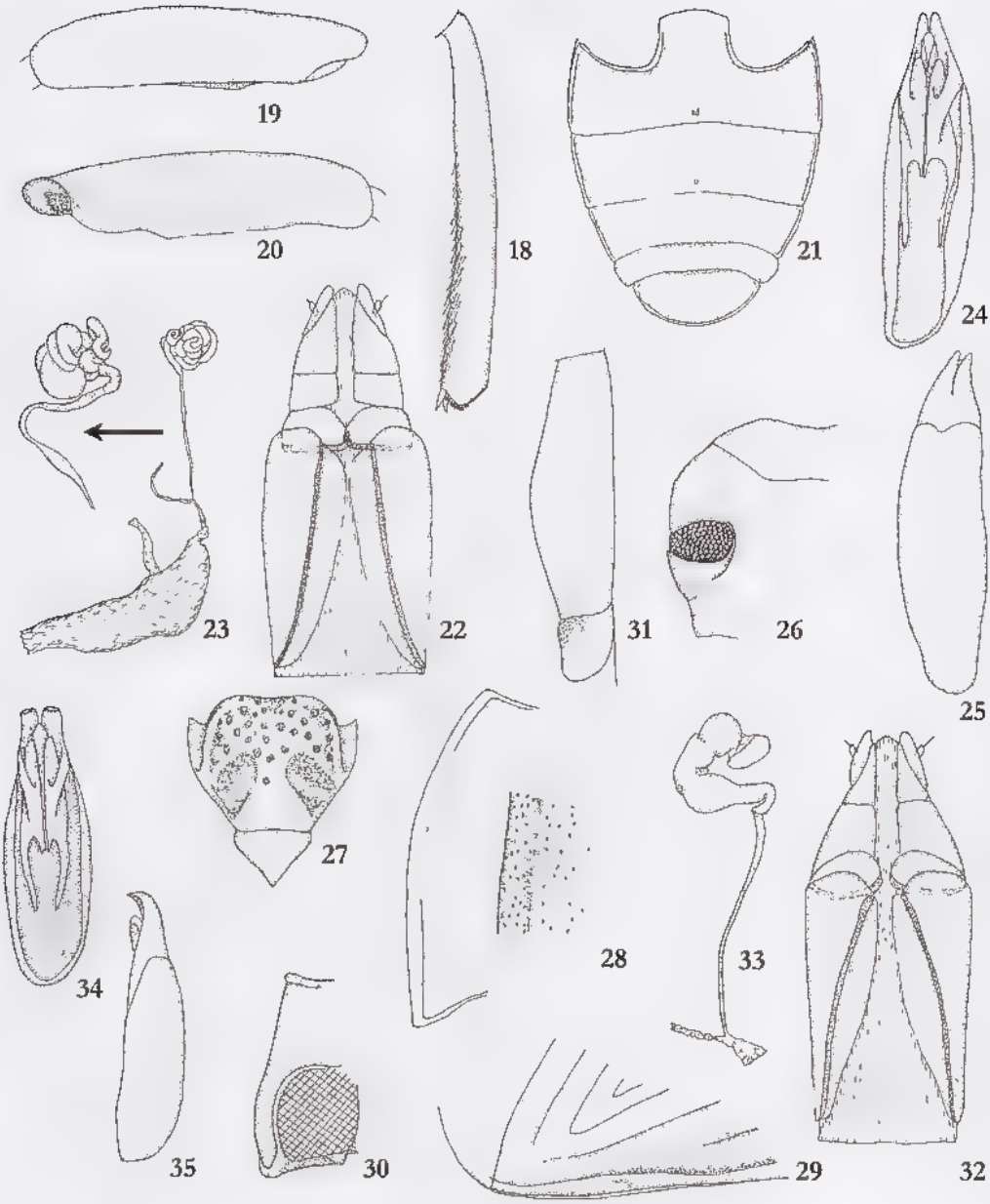


Plate 2. Figs 18-25: *Anchophthalmops menouxi* (Mulsant et Rey, 1853).
– 18: male hind tibia. – 19-20: male hind femur, ventral and dorsal views. – 21: male abdomen.
– 22: ovipositor. – 23: bursa copulatrix (enlarged spermatheca). – 24-25: aedeagus, ventral and dorsal views.
Figs 26-35: *Lechius abacoides* (Fairmaire, 1902).
– 26: head. – 27: mentum and submentum. – 28: pronotum (enlarged border of lateral margin).
– 29: apical part of elytron. – 30: prosternum (lateral view). – 31: metepisternum and metepimerum.
– 32: ovipositor. – 33: spermatheca. – 34-35: aedeagus, ventral and dorsal views.

Source : MNHN, Paris

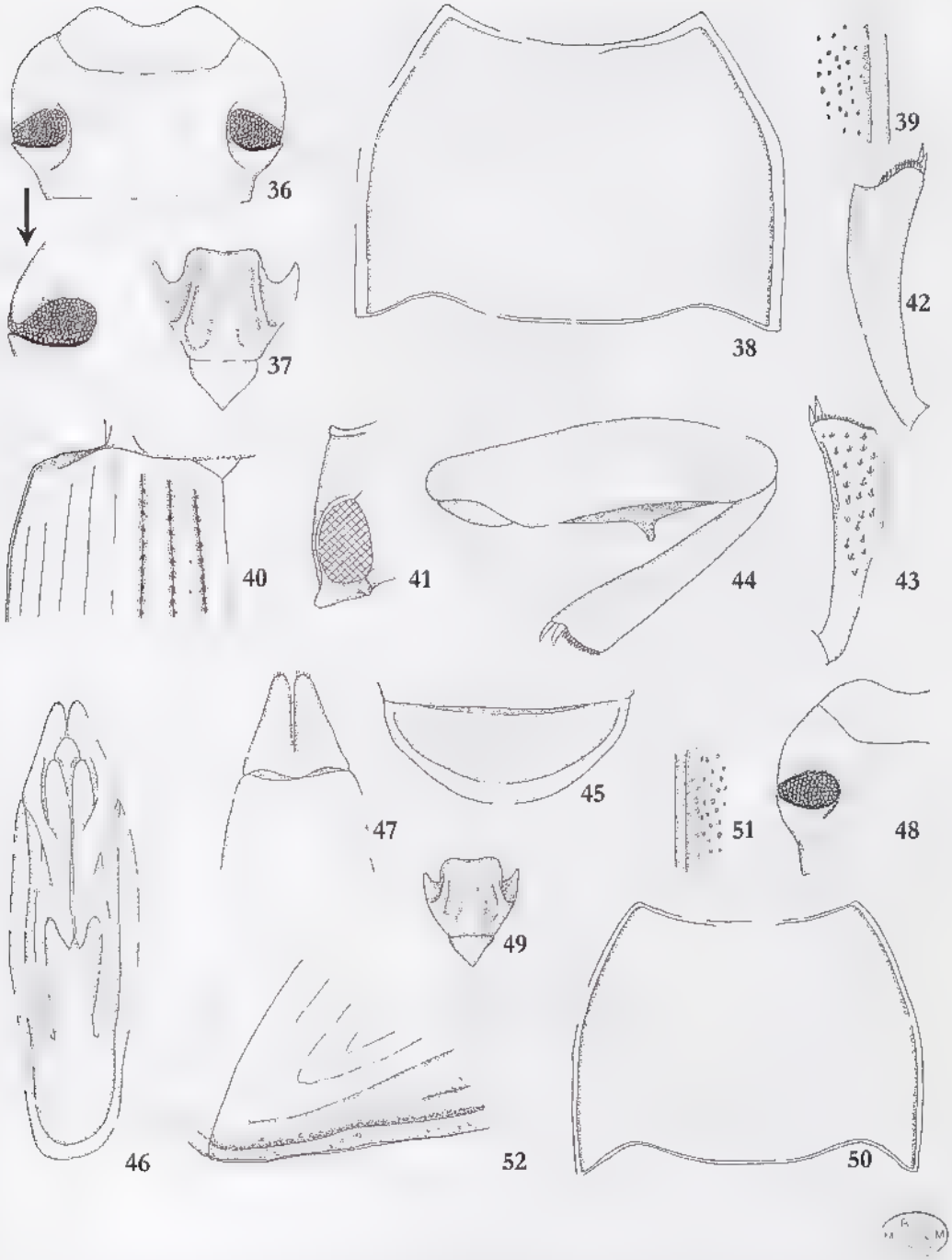


Plate 3. Figs 36-47: *Lechius madagascariensis* Iwan, 1998).
– 36: head (enlarged eye). – 37: mentum and submentum. – 38: pronotum. – 39: border of lateral pronotal margin.
– 40: anterior part of elytron (base). – 41: prosternum (lateral view). – 42-43: male fore tibia, dorsal and ventral views.
– 44: male mid tibia and femur. – 45: last abdominal ventrite. – 46-47: aedeagus, ventral and dorsal views.
Figs 48-52: *Lechius steineri* Iwan, 1995.
– 48: head. – 49: mentum and submentum. – 50: pronotum.
– 51: border of lateral pronotal margin. – 52: apical part of elytron.

Source : MNHN, Paris

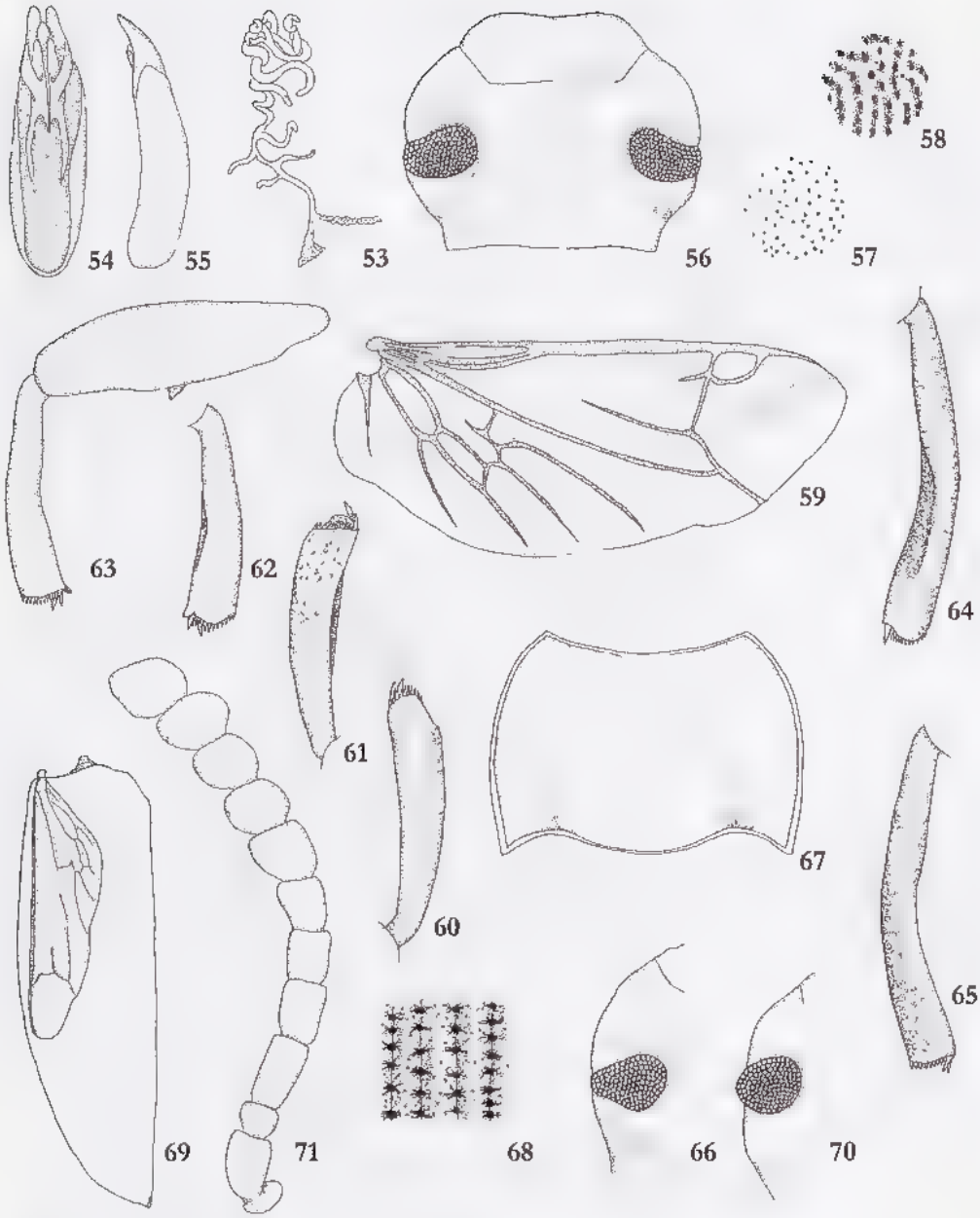


Plate 4. Figs 53-55: *Lechius steineri* Iwan, 1995.
– 53: spermatheca. – 54-55: aedeagus, ventral and dorsal views. Figs 56-65: *Zidalus attenuatus* (Klug, 1833). – 56: head.
– 57-58: punctation of prosternum (in the middle and near lateral margin). – 59: wing. – 60-61: male fore tibia, dorsal and ventral views.
– 62: male mid tibia. – 63: male mid tibia and femur. – 64-65. male hind tibia, dorsal and ventral views.
Figs 66-69: *Zidalus insularis* (Mulsant et Rey, 1853).
– 66: head. – 67: pronotum, – 68: punctation of elytron. – 69: partly reduced wing.
Figs 70-71: *Zidalus servus* (Mulsant et Rey, 1853).
– 70: head. – 71: antenna.

Source : MNHN, Paris

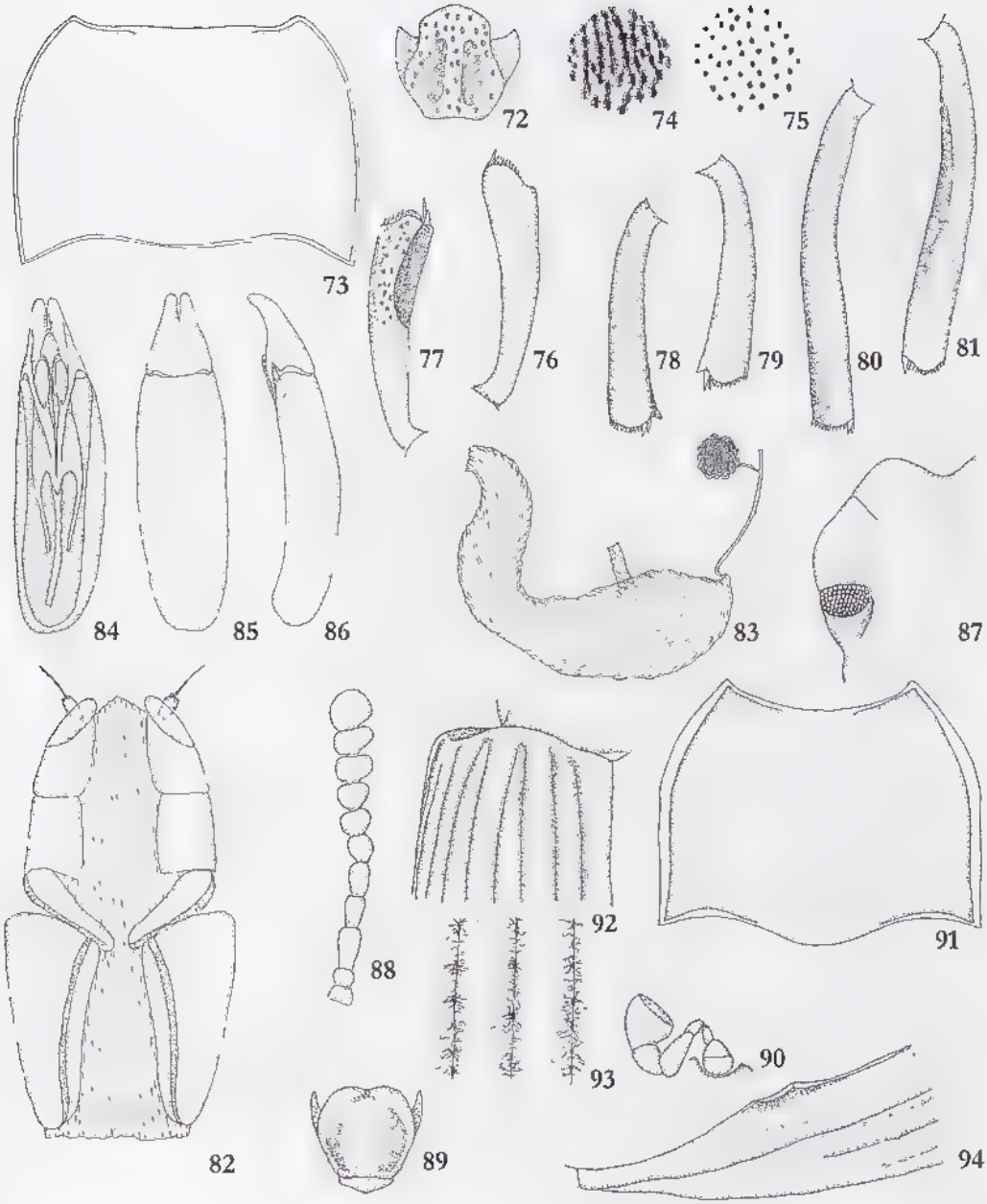


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Plate 5. Figs 72-86: *Zidalus servus* (Mulsant et Rey, 1853).
– 72: mentum. – 73: pronotum. – 74-75: punctation of prosternum (in the middle and near lateral margin).
– 76-77: male fore tibia, ventral and dorsal views. – 78-79: male mid tibia, dorsal and ventral views.
– 80-81: male hind tibia, ventral and dorsal views. – 82: ovipositor. – 83: internal female *genitalia*.
– 84-86: aedeagus, ventral, dorsal and lateral views.
Figs 87-94: *Clastopus aberlenci* Iwan, 2005
– 87: head. – 88: antenna. – 89: mentum. – 90: maxillary palp, male. – 91: pronotum.
– 92: anterior part of elytron (base). – 93: punctation of elytron. – 94: apical part of elytron.

Source : MNHN, Paris

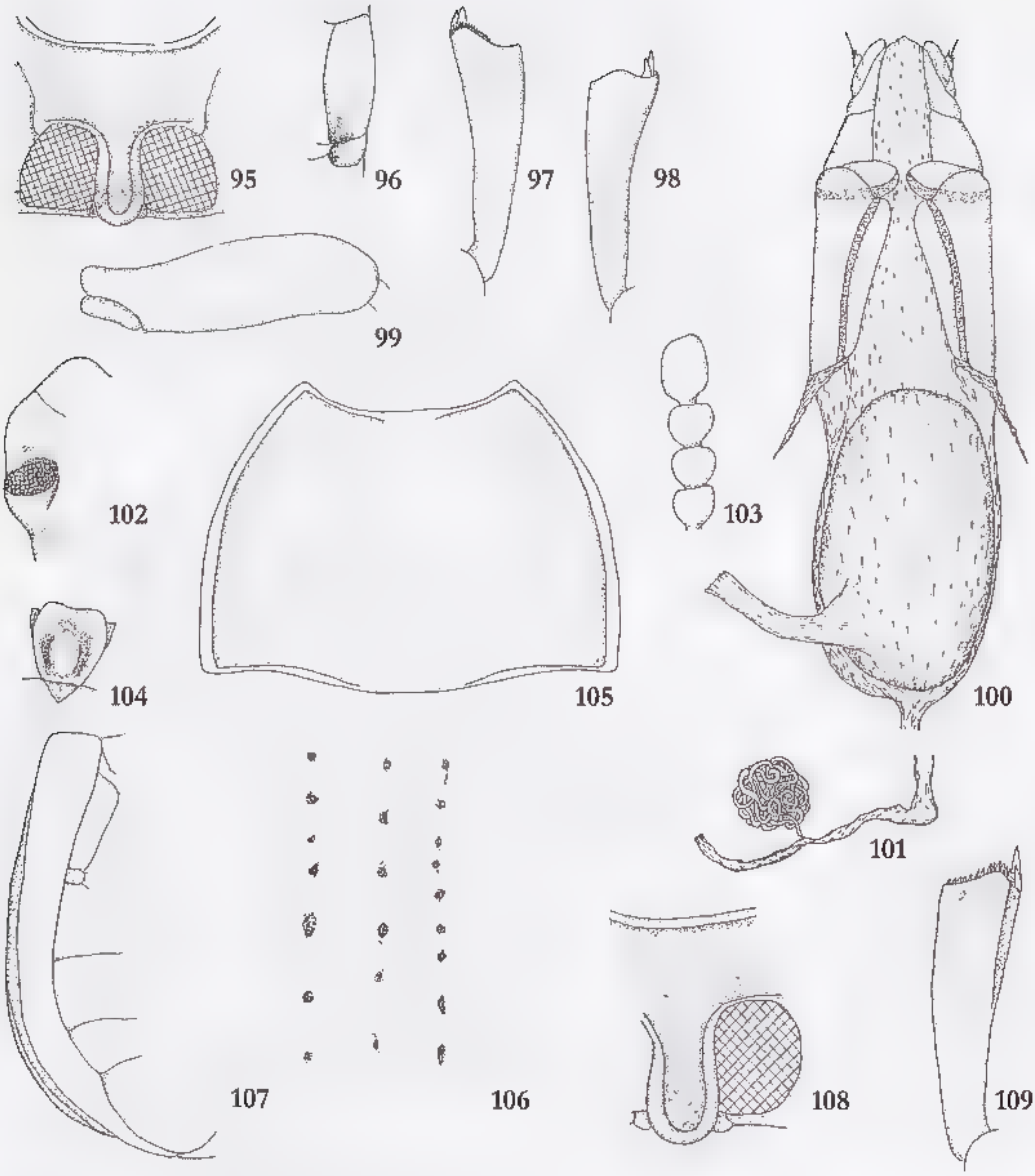

Plate 6. Figs 95-101: *Clastopus aberlenci* Iwan, 2005
– 95: prosternum. – 96: metepisternum and metepimerum. – 97-98: male fore tibia, dorsal and ventral views.
– 99: male fore femur. – 100: ovipositor and bursa copulatrix (with egg inside). – 101: spermatheca.
Figs 102-109: *Clastopus eurynotoides* Fairmaire, 1898.
– 102: head. – 103: antennomeres 8-11.
– 104: mentum and submentum. – 105: pronotum. – 106: punctation of elytron.
– 107: elytral epipleuron. – 108: prosternum. – 109: male fore tibia, ventral view.

Source : MNHN, Paris

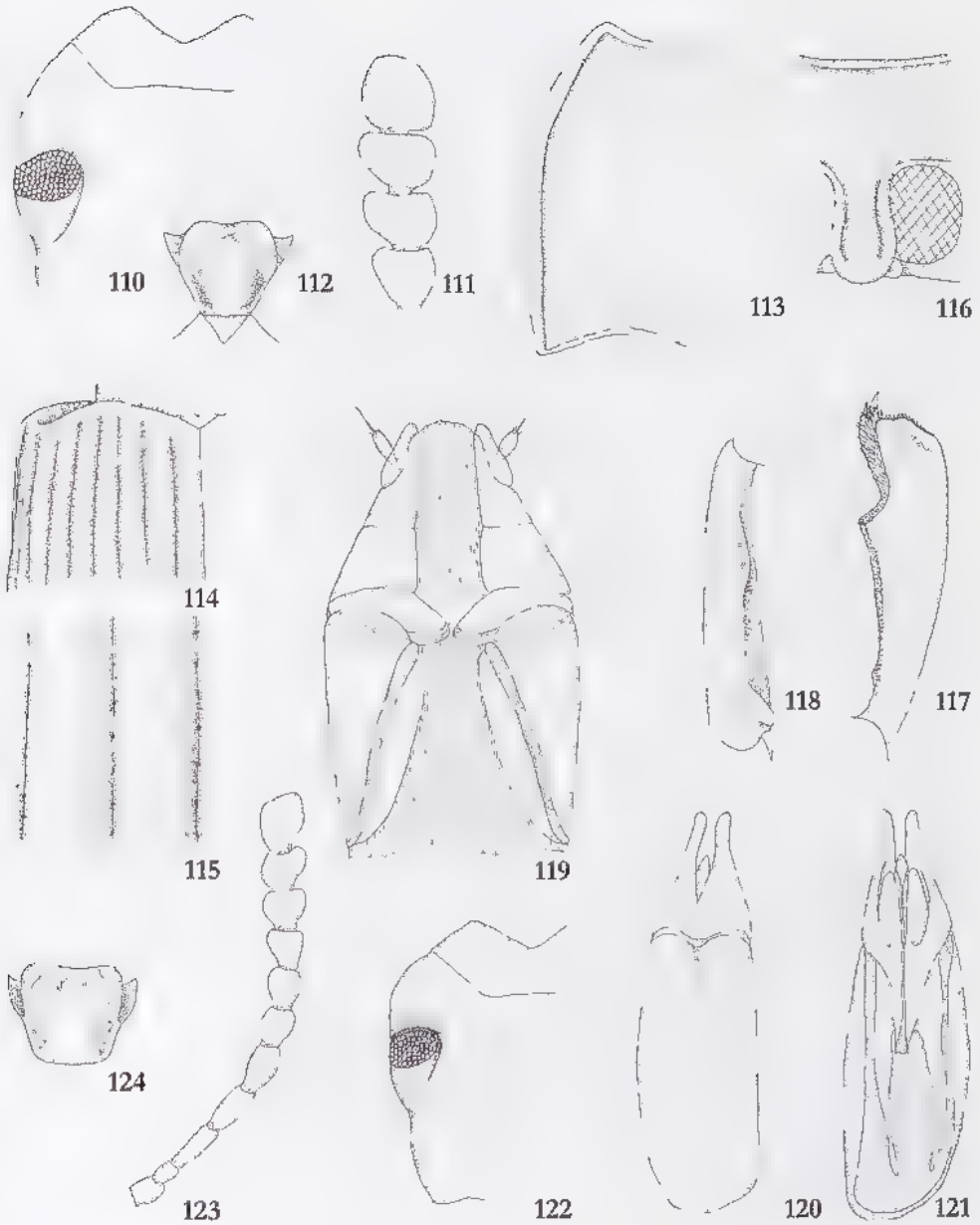

Plate 7. Figs 110-121: *Clastopus ordinarius* (Iwan, 1996).
– 110: head. – 111: antennomeres 8-11. – 112: mentum and submentum.
– 113: pronotum. – 114: anterior part of elytron (base). – 115: punctation of elytron.
– 116: prosternum. – 117: male fore tibia, ventral view. – 118: male mid tibia, ventral view.
– 119: ovipositor. – 120-121: aedeagus, dorsal and ventral sides.
Figs 122-124. *Clastopus tenuiculus* (Iwan, 1996).
– 122: head. – 123: antenna. – 124: mentum.

Source : MNHN, Paris

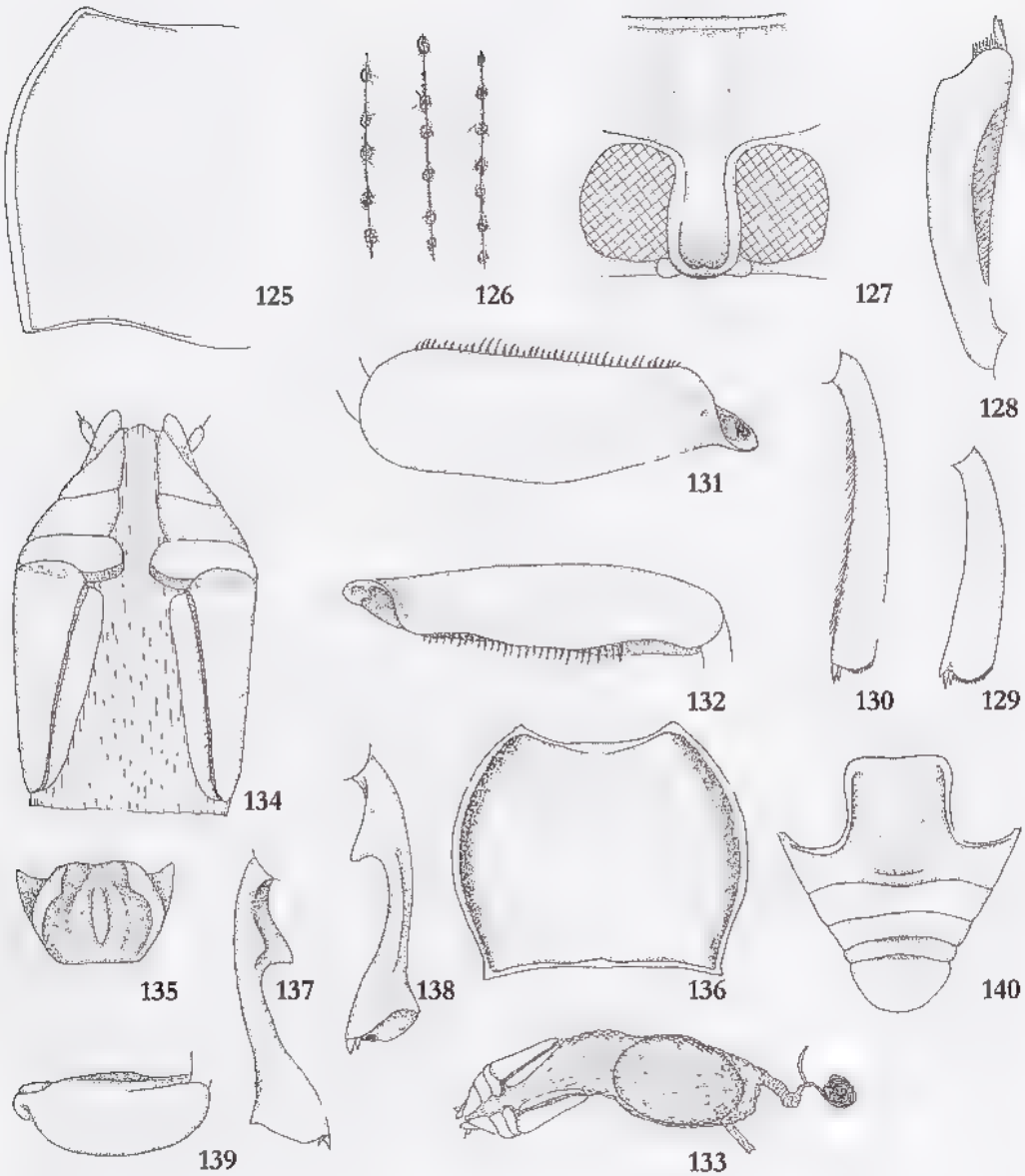

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Plate 8. Figs 125-134: *Clastopus tenuiculus* (Iwan, 1996).
– 125: pronotum. – 126: punctation of elytron. – 127: prosternum. – 128: male fore tibia.
– 129: male mid tibia. – 130: male hind tibia. – 131: male fore femur. – 132: male mid femur.
–133: female *genitalia* (with egg inside). – 134: ovipositor.
Figs 135-140: *Doyenus dentatus* Iwan, 1996.
– 135: mentum. – 136: pronotum. – 137-138: male hind tibia, dorsal and ventral views.
– 139: male fore femur. – 140: male abdomen.

Source : MNHN, Paris

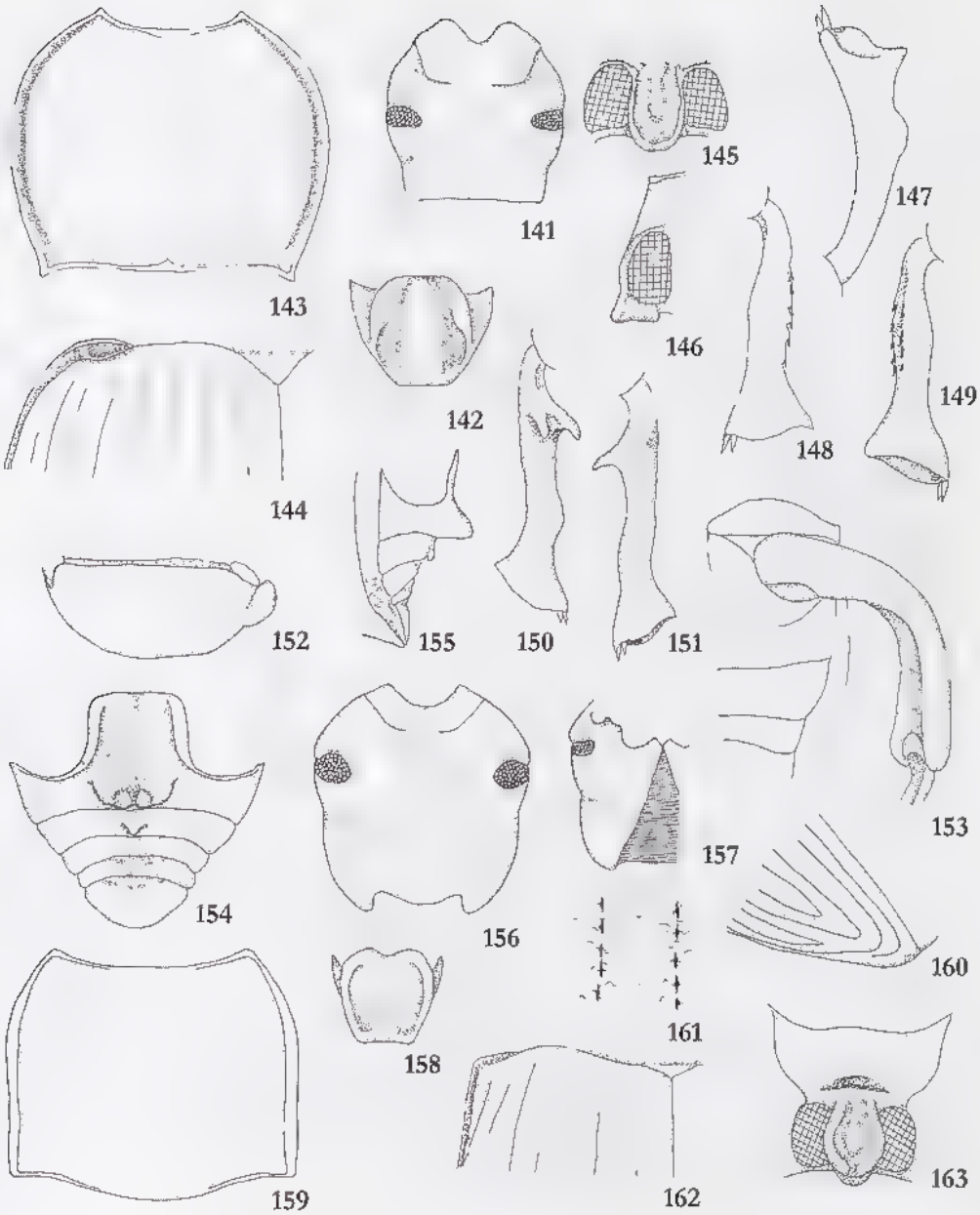

Plate 9. Figs 141-155: *Doyenus uncus* Iwan, 1996.
– 141: head. – 142: mentum. – 143: pronotum. – 144: anterior part of elytron (base). – 145-146: prosternal process. – 147: male fore tibia.
– 148- 149: male mid tibia, ventral and dorsal views. – 150-151: male hind tibia, dorsal and ventral views.
– 152: male fore femur. – 153: male hind femur. – 154-155: male abdomen.
Figs 156-163: *Hovademus andringitrensis* Ardoin, 1974.
– 156: head. – 157: head, ventral view. – 158: mentum. – 159: pronotum. – 160: apical part of elytron.
– 161: punctation of elytron. – 162: anterior part of elytron (base). – 163: prosternum.

Source : MNHN, Paris

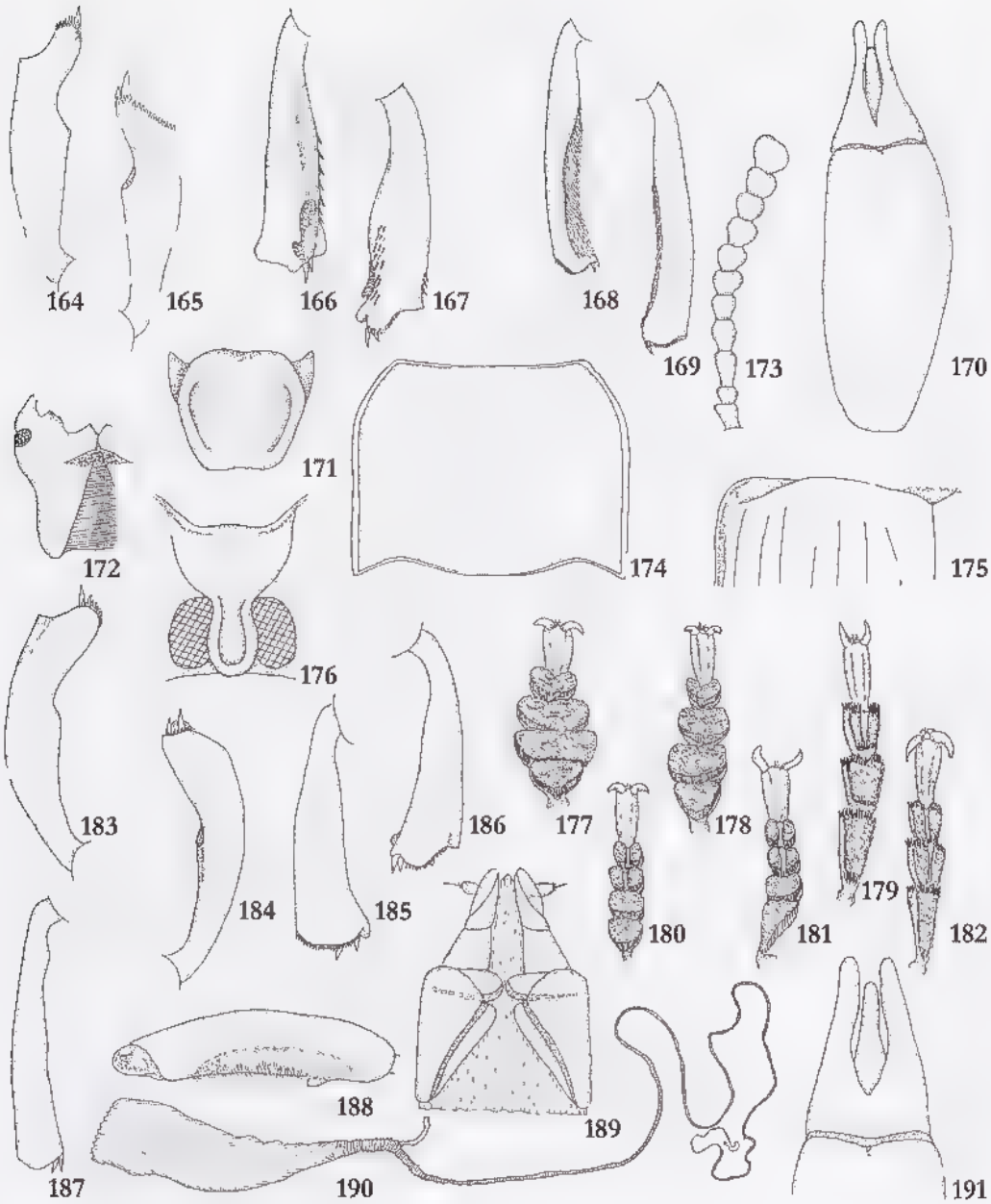

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Plate 10. Figs 164-170: *Hovademus andringitrensis* Ardoin, 1974.
– 164-165: male fore tibia, dorsal and ventral views. – 166-167: male mid tibia, dorsal and ventral views.
– 168-169: male hind tibia, dorsal and ventral views. – 170: aedeagus.
Figs 171-191: *Hovademus pauliani* Ardoin, 1974.
– 171: mentum. – 172: head, ventral view. – 173: antenna. – 174: pronotum. – 175: anterior part of elytron.
– 176: prosternum. – 177-179: male tarsi – fore, mid and hind. – 180-182: female tarsi – fore, mid and hind.
– 183-184: male fore tibia, dorsal and ventral views. – 185-186: male mid tibia, ventral and dorsal views. – 187: male hind tibia.
– 188: male hind femur. – 189: ovipositor. – 190: bursa copulatrix and spermatheca. – 191: aedeagus.

Source : MNHN, Paris

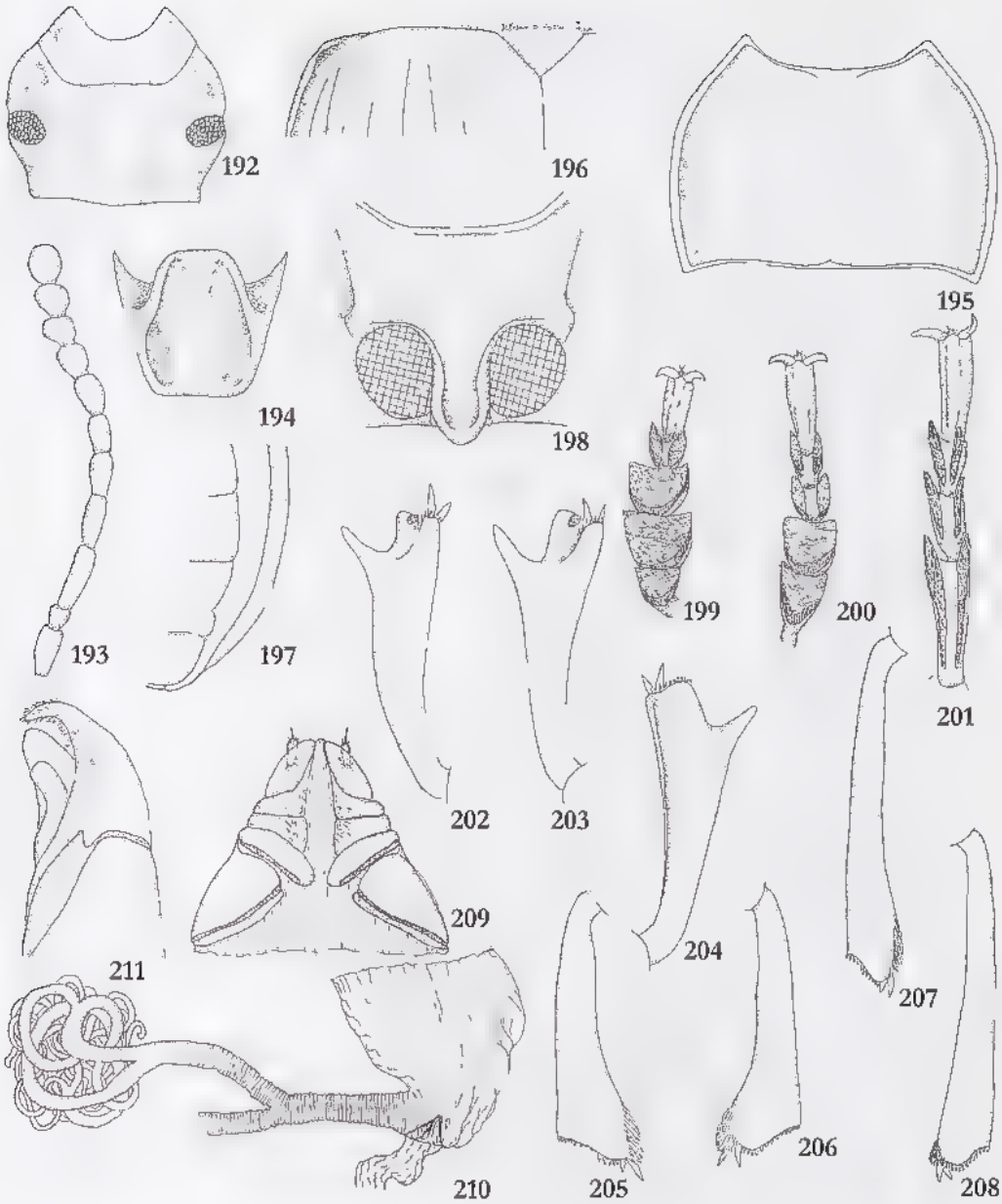

Plate 11. Figs 192-211: *Madobalus rotundicollis* Fairmaire, 1901.
– 192: head. – 193: antenna. – 194: mentum. – 195: pronotum.
– 196: anterior part of elytron (base). – 197: apical part of elytron, ventral view. – 198: prosternum.
– 199-201: male tarsi – fore, mid and hind. – 202: female fore tibia. – 203-204: male fore tibia, dorsal and ventral views.
– 205-206: male fore tibia, ventral and dorsal views. – 207-208: male hind tibia, dorsal and ventral views.
– 209: ovipositor. – 210: part of bursa copulatrix and spermatheca. – 211: aedeagus.

Source : MNHN, Paris

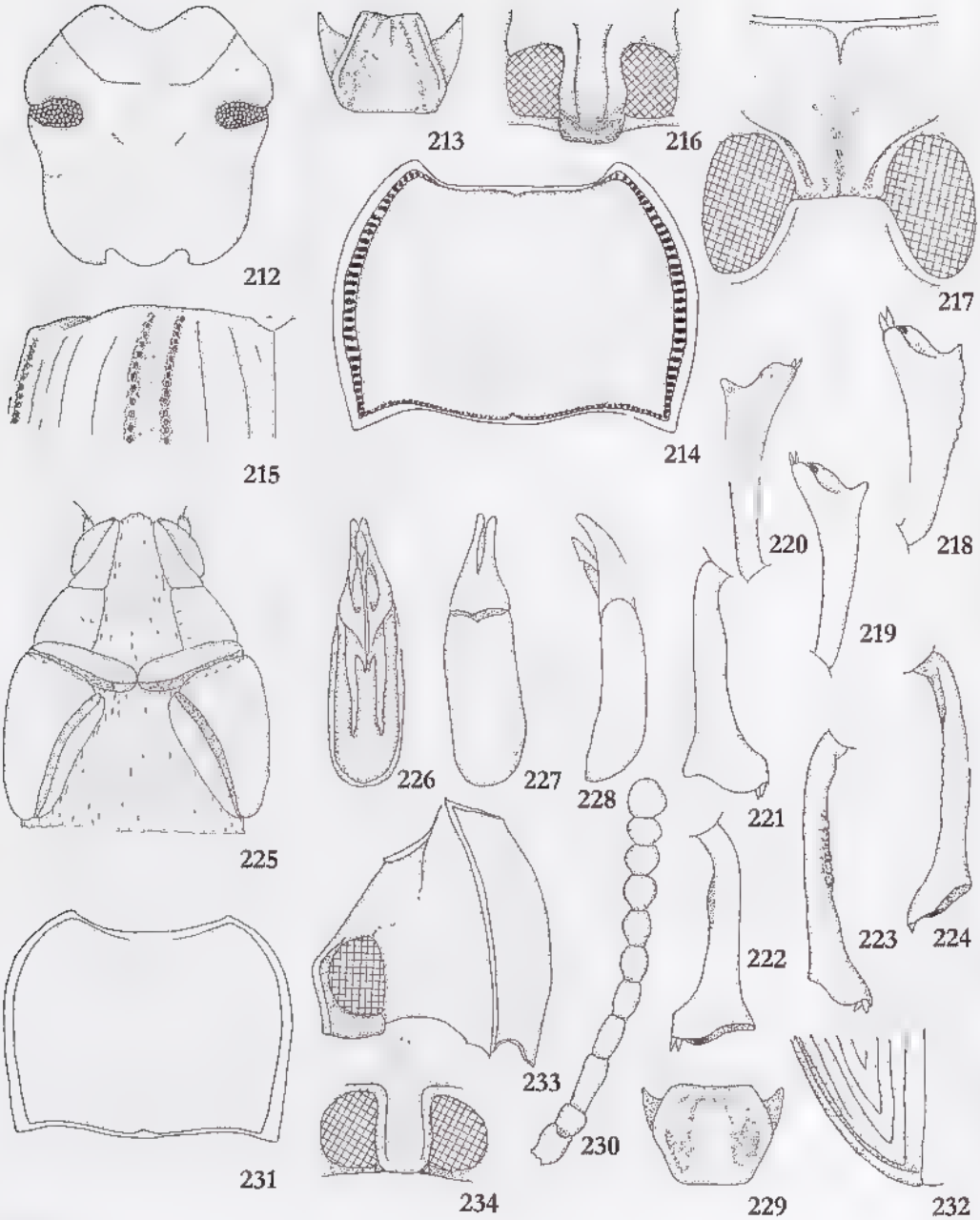

Plate 12. Figs 212-228: *Melanocratus fairmairei* Iwan, 1996.
– 212: head. – 213: mentum. – 214: pronotum. – 215: anterior part of elytron.
– 216: prosternal process. – 217: mesosternal process. – 218: female fore tibia.
– 219-220: male fore tibia, dorsal and ventral views. – 221-222: male mid tibia, ventral and dorsal views.
– 223-224: male hind tibia, dorsal and ventral views. – 225: ovipositor. – 226-228: aedeagus, ventral, dorsal and lateral views.
Figs 229-234: *Melanocratus ferreri* Iwan, 1996.
– 229: mentum. – 230: antenna. – 231: pronotum. – 232: apical part of elytron. – 233: pronotum. – 234: prosternal process.

Source : MNHN, Paris

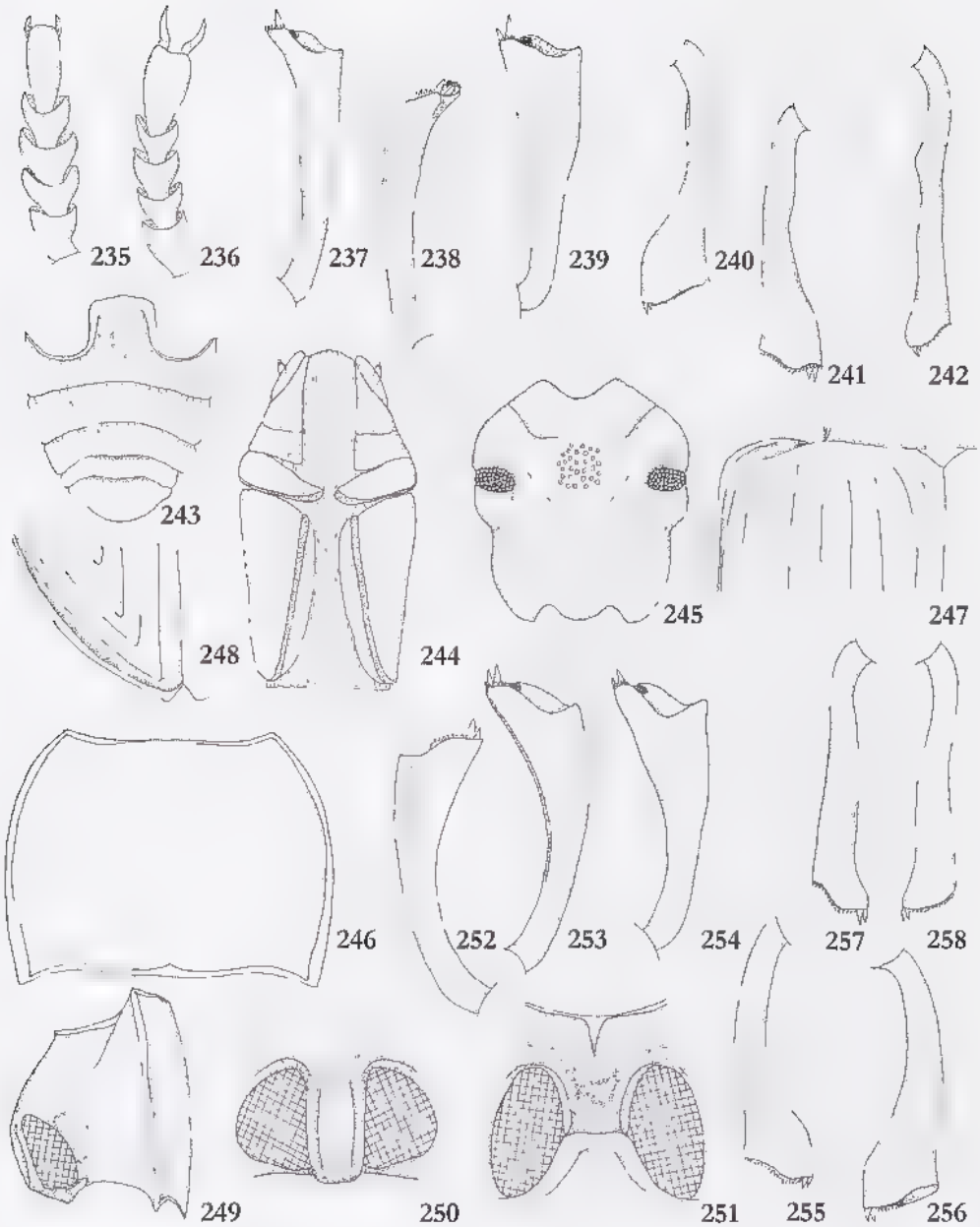

Plate 13. Figs 235-244: *Melanocratus ferreri* Iwan, 1996.
– 235: male fore tarsus. – 236: female fore tarsus. – 237-238: male fore tibia, dorsal and ventral views. – 239: female fore tibia. – 240-241: male mid tibia, dorsal and ventral views. – 242: male hind tibia. – 243: male abdomen. – 244: ovipositor.
Figs 245-258: *Melanocratus validipes* Fairmaire, 1895.
– 245: head. – 246: pronotum. – 247: anterior part of elytron (base). – 248: apical part of elytron. – 249: pronotum, lateral view. – 250: prosternal process. – 251: mesosternal process. – 252-253: male fore tibia, ventral and dorsal views. – 254: female fore tibia. – 255-256: male mid tibia, dorsal and ventral views. – 257-258: male hind tibia, dorsal and ventral views.

Source : MNHN, Paris

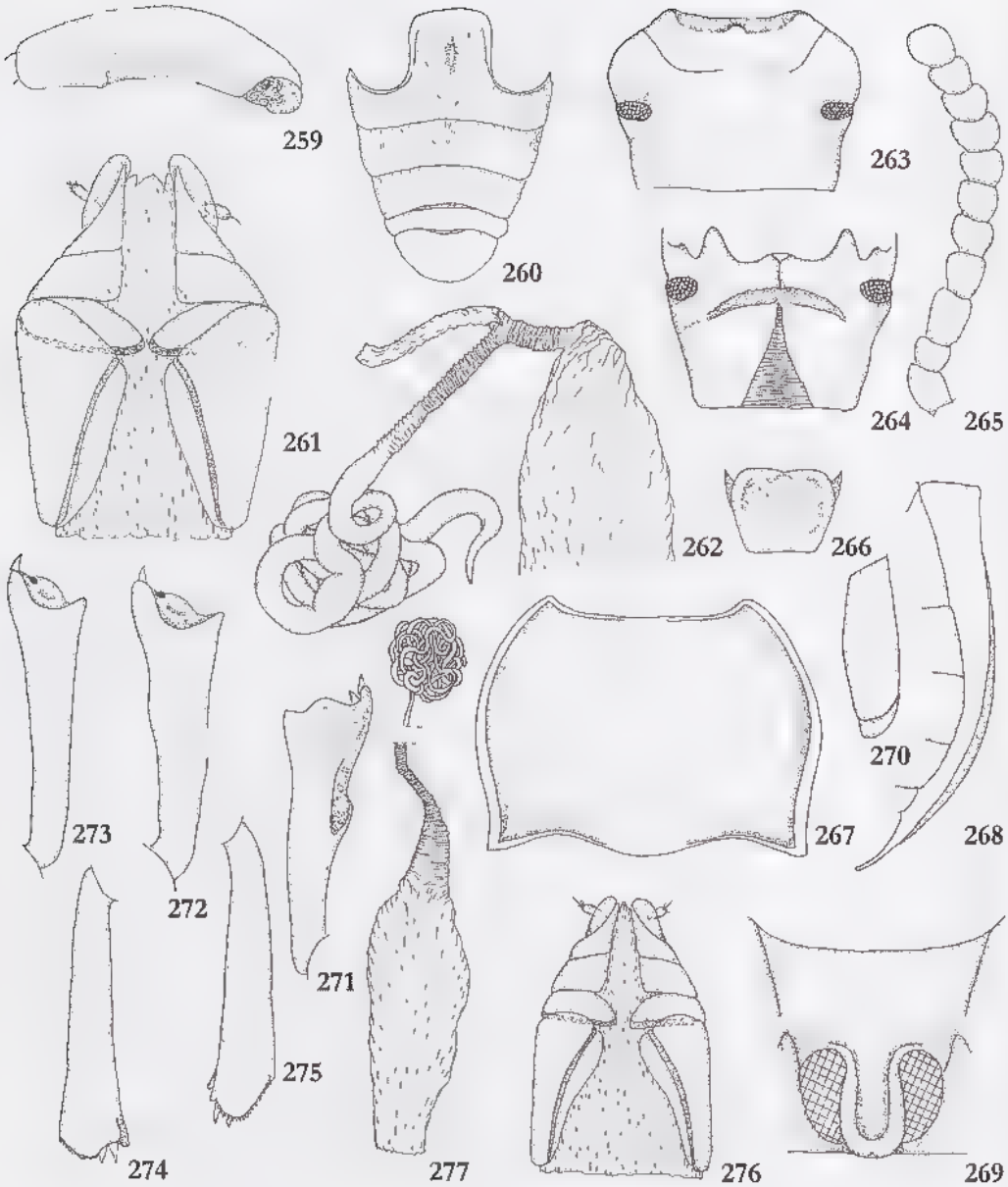

Plate 14. Figs 259-262: *Melanocratus validipes* Fairmaire, 1895.
– 259: male hind femur. – 260: male abdomen. – 261: ovipositor. – 262: part of bursa copulatrix and spermatheca.
Figs 263-277: *Pokryszkiella cornuta* Iwan, 1996.
– 263-264: head, dorsal and ventral views. – 265: antenna. – 266: mentum. – 267: pronotum.
– 268: elytral epipleuron. – 269: prosternum. – 270: metepisternum and metepimerum.
– 271-272: male fore tibia, ventral and dorsal views. – 273: female fore tibia.
– 274-275: male mid tibia, dorsal and ventral views. – 276: ovipositor. – 277: bursa copulatrix and spermatheca.

Source : MNHN, Paris

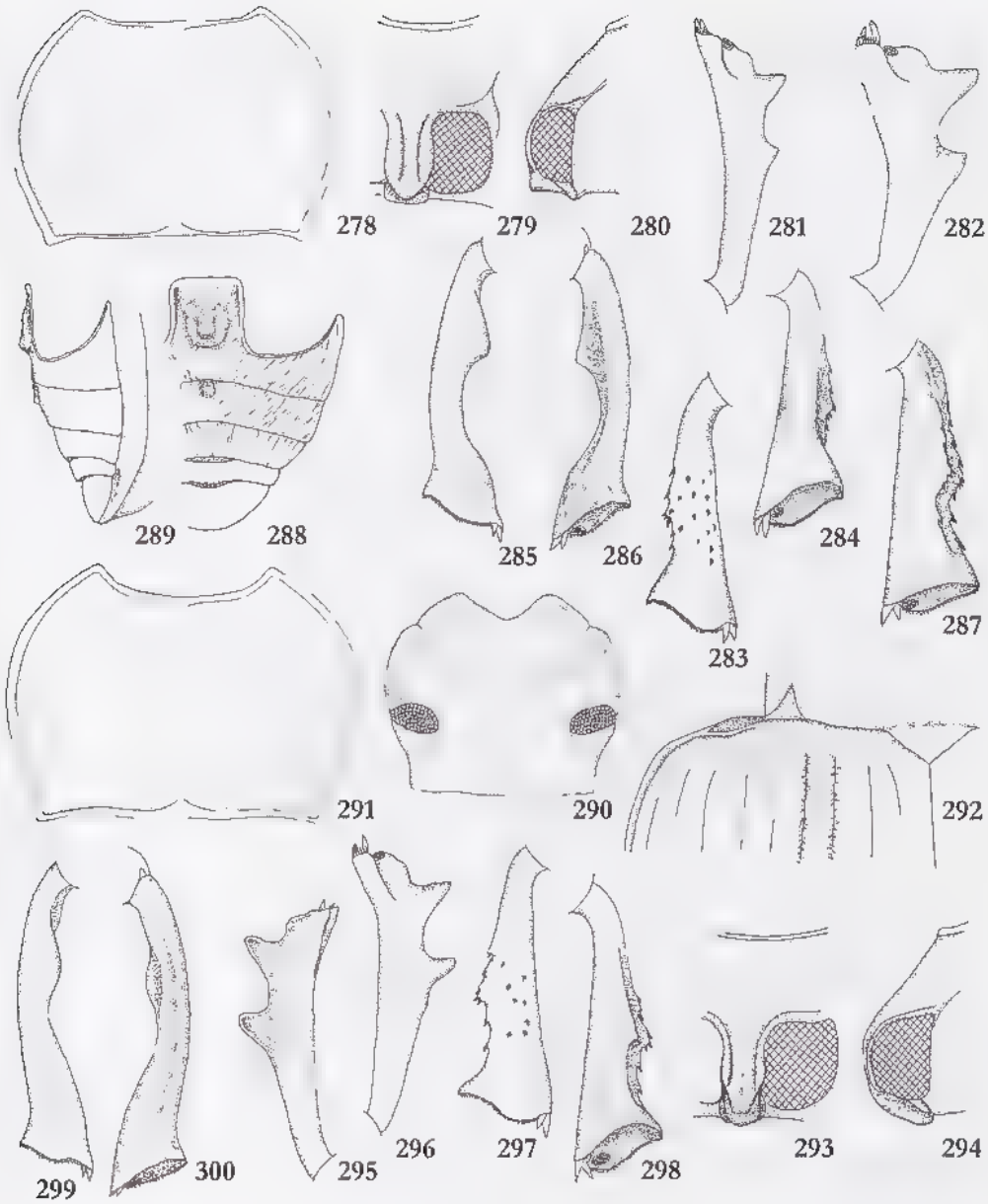

Plate 15. Figs 278-289: *Sebastianus endrodyi* Iwan, 1999.
278: pronotum. – 279-280: prosternal process. – 281: male fore tibia. – 282: female fore tibia. – 283–284: male mid tibia, ventral and dorsal view
– 285-286: male hind tibia, ventral and dorsal views. – 287: female mid tibia. – 288-289: male abdomen.
Figs 290-300: *Sebastianus madagascariensis* Iwan, 1999.
– 290: head. – 291: pronotum. – 292: anterior part of elytron. – 293-294: prosternal process.
– 295-296: male fore tibia, ventral and dorsal views.
– 297-298: male mid tibia, ventral and dorsal views. – 299-300: male hind tibia, ventral and dorsal views.

Source : MNHN, Paris

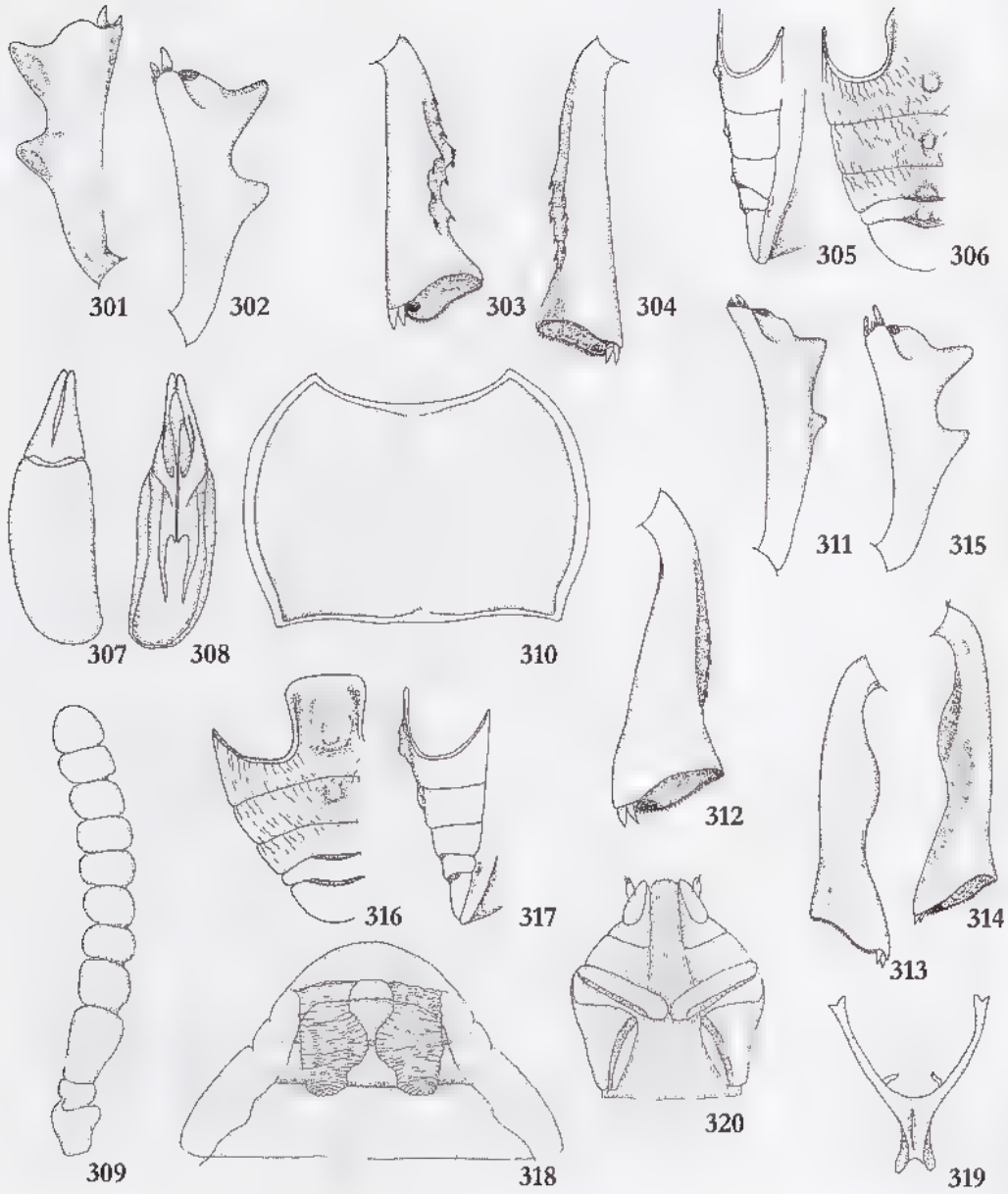

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Plate 16. Figs 301-308: *Sebastianus madagascariensis* Iwan, 1999.
– 301-302: female fore tibia, ventral and dorsal views. – 303: female mid tibia. – 304: female hind tibia.
– 305-306: male abdomen. – 307-308: aedeagus, dorsal and ventral views.
Figs 309-320: *Sebastianus magnus* Iwan, 1996.
– 309: antenna. – 310: pronotum. – 311: male fore tibia. – 312: male mid tibia.
– 313-314: male hind tibia, ventral and dorsal views. – 315: female fore tibia. – 316-317: male abdomen.
– 318: abdominal ventrites III-V, defensive glands. – 319: metendosternite. – 320: ovipositor.

Source : MNHN, Paris

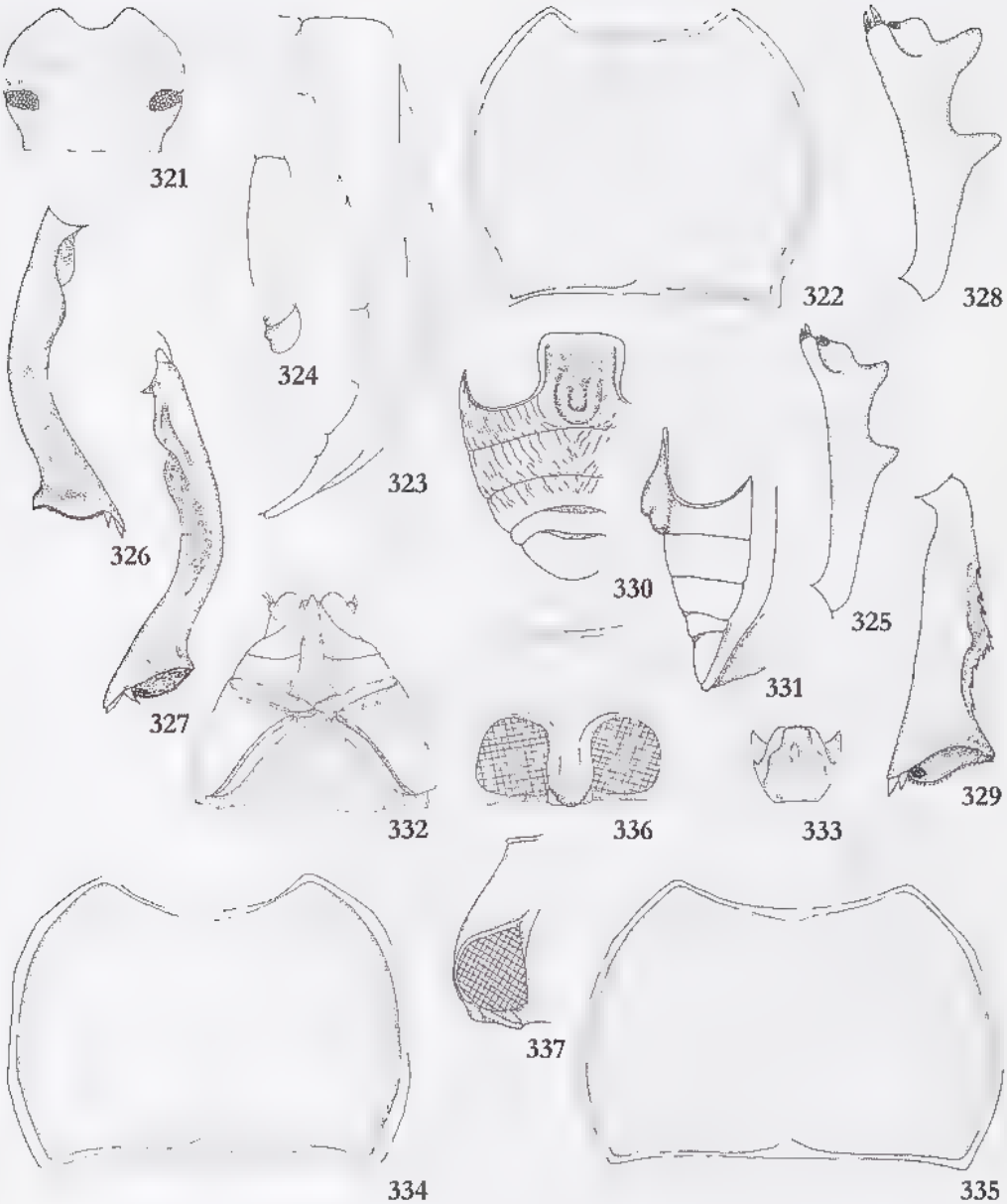

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Plate 17. Figs 321-332: *Sebastianus major* (Fairmaire, 1899).
– 321: head. – 322: pronotum. – 323: elytral epipleuron.
– 324: metepisternum and metepimerum. – 325: male fore tibia.
– 326-327: male hind tibia, ventral and dorsal views. – 328: female fore tibia.
– 329: female mid tibia. – 330-331: male abdomen. – 332: ovipositor.
Figs 333-337: *Sebastianus ovoideus* (Fairmaire).
– 333: mentum. – 334: male pronotum. – 335: female pronotum. – 336-337: prosternal process.

Source : MNHN, Paris

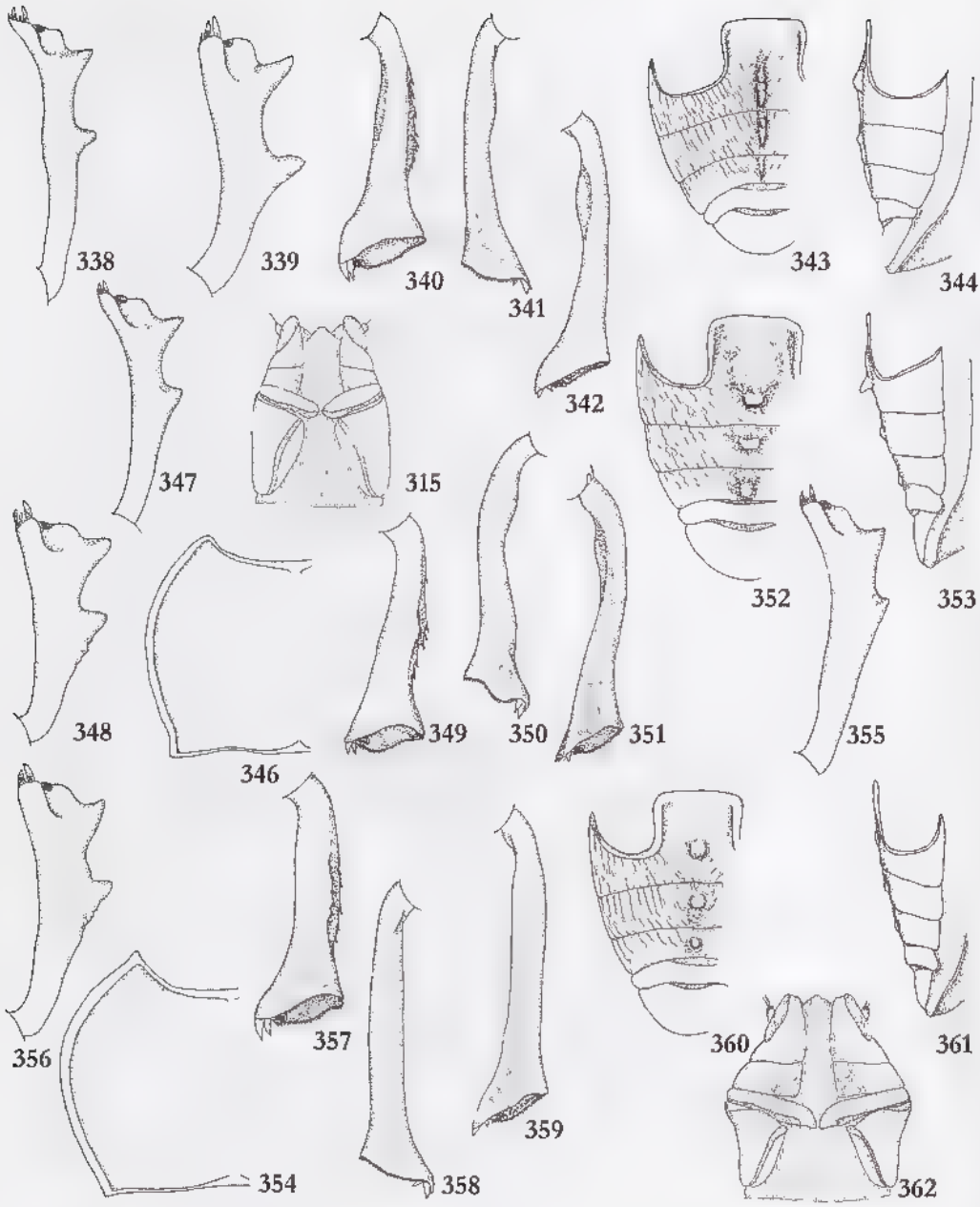


Plate 18. Figs 338-345: *Sebastianus ovoideus* (Fairmaire, 1902).
– 338: male fore tibia. – 339: female fore tibia. – 340: male mid tibia. – 341-342: male hind tibia, ventral and dorsal views.
– 343-344: male abdomen. – 345: ovipositor.
Figs 346-353: *Sebastianus projectus* Iwan, 1996.
– 346: pronotum. – 347: male fore tibia. – 348: female fore tibia. – 349: male mid tibia.
– 350-351: male hind tibia, ventral and dorsal views. – 352-353: male abdomen.
Figs 354-362: *Sebastianus simplex* Iwan, 1996.
– 354: pronotum. – 355: male fore tibia. – 356: female fore tibia. – 357: male mid tibia.
– 358-359: male hind tibia, ventral and dorsal views. – 360-361: male abdomen. – 362: ovipositor.

Source : MNHN, Paris

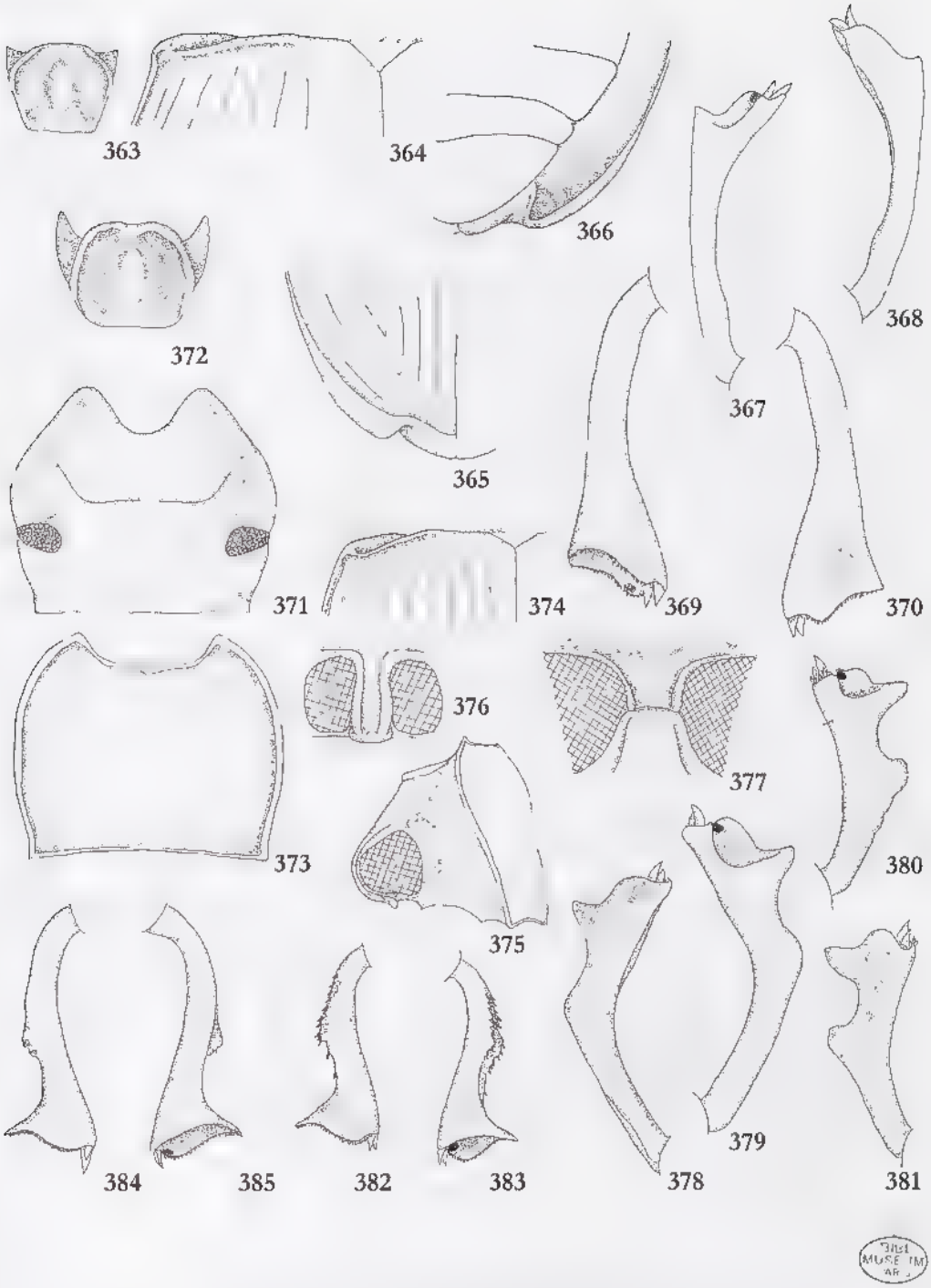


Plate 19. Figs 363-370: *Styphacus bartolozzii* Iwan, 1996.
– 363: mentum. – 364: anterior part of elytron. – 365-366: apical part of elytron, dorsal and ventral views.
– 367-368: male fore tibia, dorsal and ventral views. – 369-370: male mid tibia, dorsal and ventral views.
Figs 371-385: *Styphacus decorsei* Fairmaire, 1901.
– 371: head. – 372: mentum. – 373: pronotum. – 374: anterior part of elytron.
– 375: pronotum, lateral view. – 376: prosternal process.
– 377: mesosternal process. – 378-379: male fore tibia, ventral and dorsal views.
– 380-381: female fore tibia, dorsal and ventral views.
– 382-383: female mid tibia, ventral and dorsal views. – 384-385: male mid tibia, ventral and dorsal views.

Source : MNHN, Paris

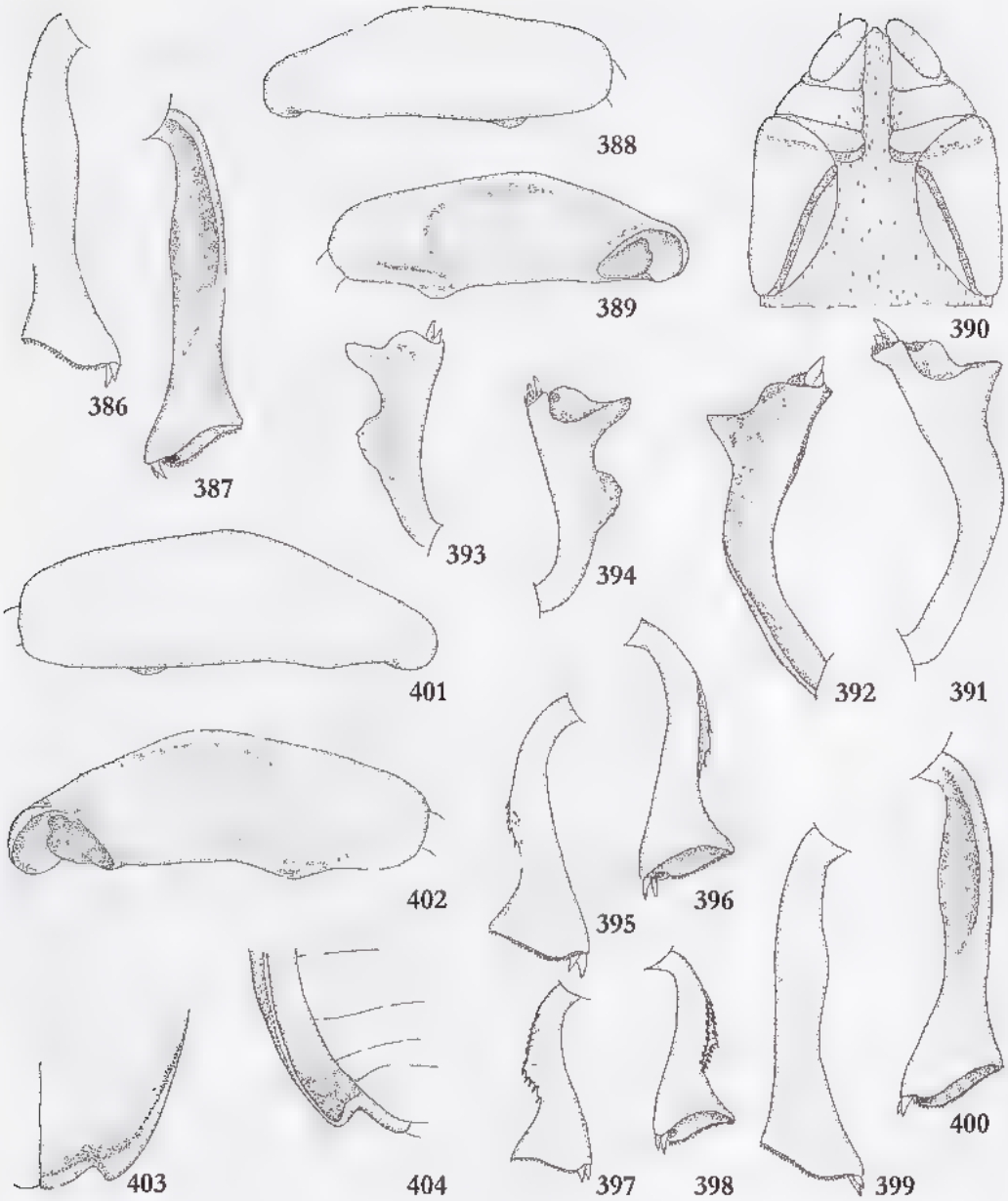


Plate 20. Figs 386-390: *Styphacus decorsei* Fairmaire, 1901.
– 386-387: male hind tibia, ventral and dorsal views.
– 388-389: male hind femur, ventral and dorsal views. – 390: ovipositor.
Figs 391-404: *Styphacus drugmandi* Iwan, 2004.
– 391-392: male fore tibia, dorsal and ventral views.
– 393-394: female fore tibia, ventral and dorsal views. – 395-396: male mid tibia, ventral and dorsal views.
– 397-398: female mid tibia, ventral and dorsal views. – 399-400: male mid tibia, ventral and dorsal views.
– 401-402: male hind tibia, ventral and dorsal views. – 403-404: apical part of elytron, dorsal and ventral views.

Source : MNHN, Paris

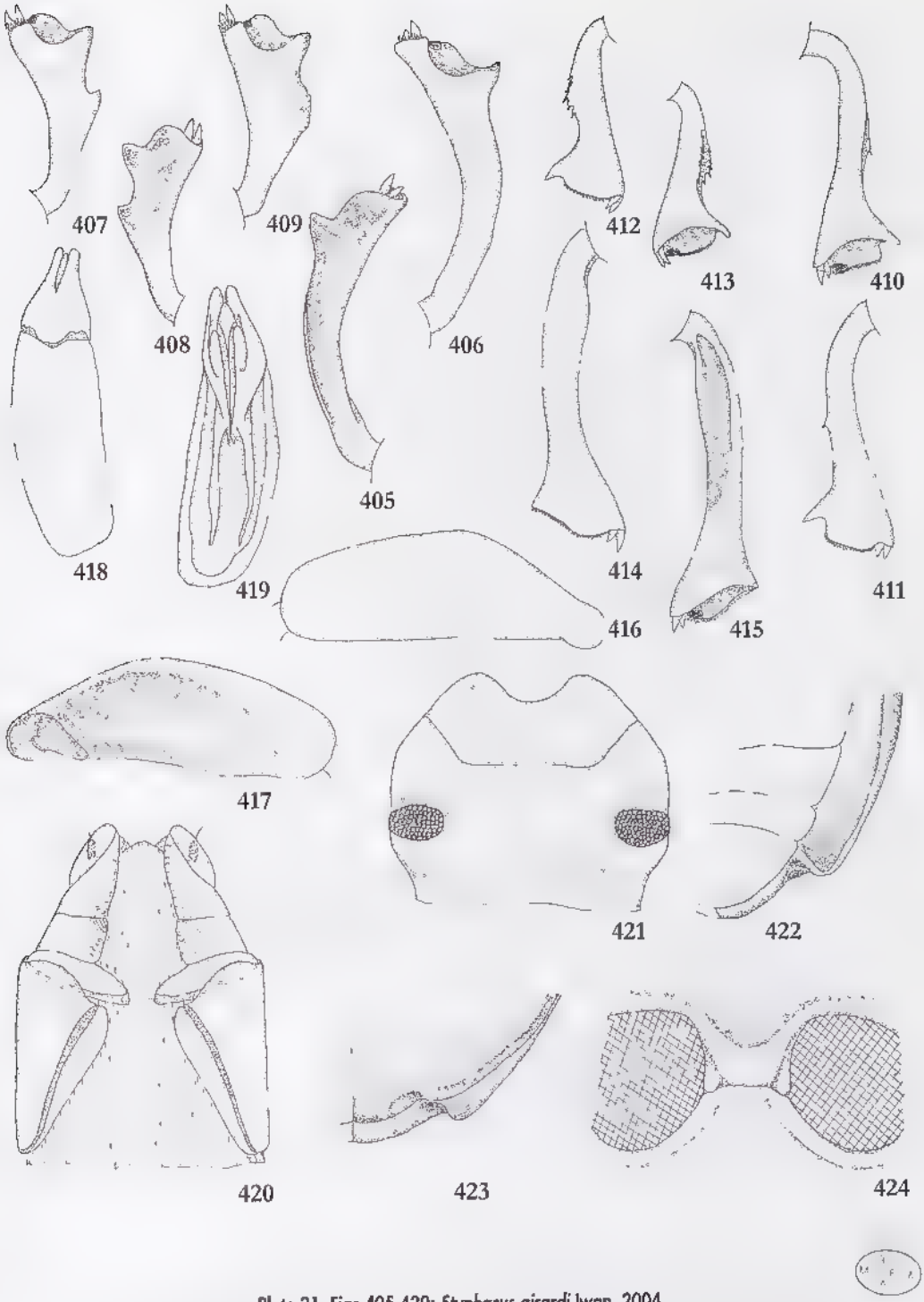
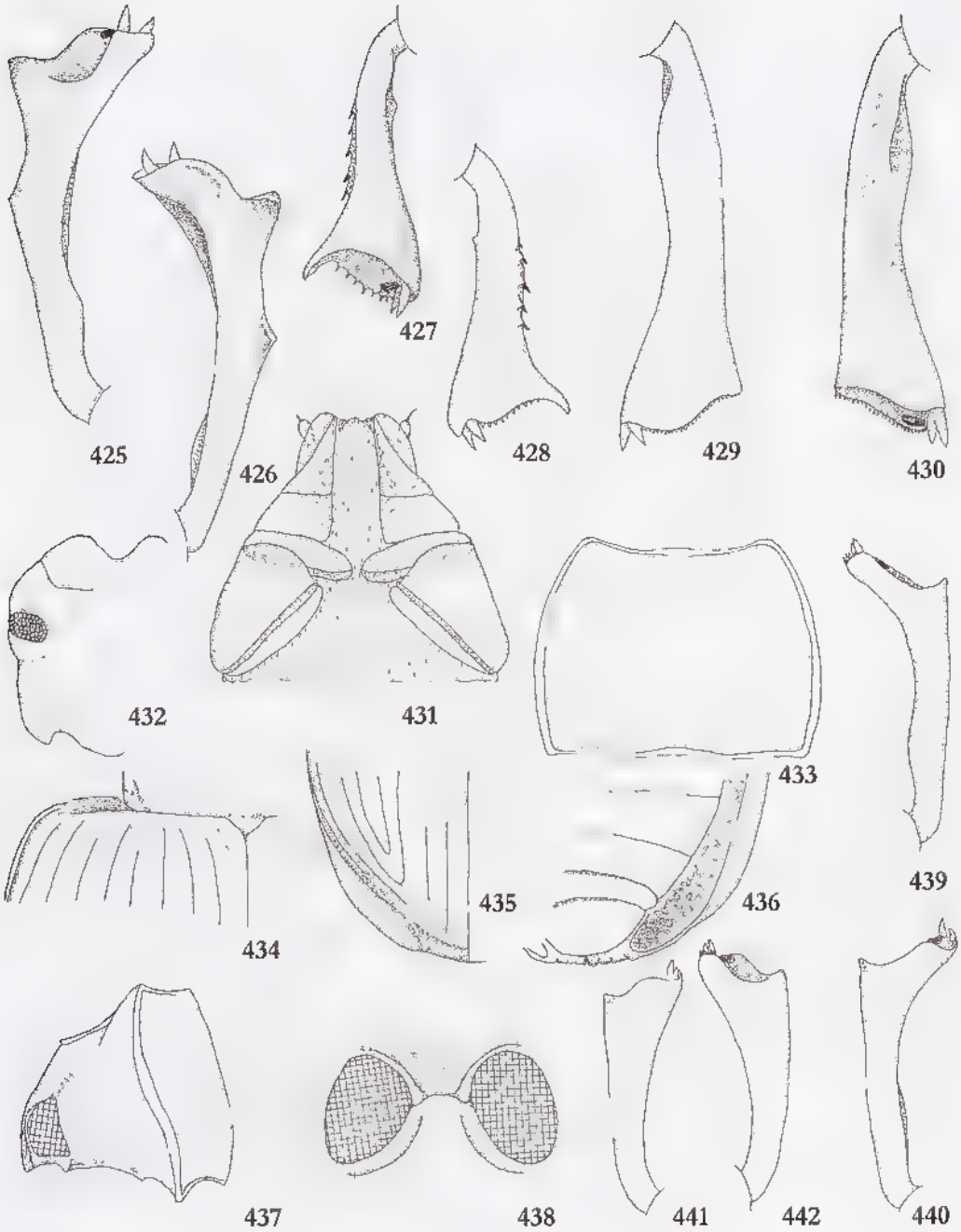


Plate 21. Figs 405-420: *Styphacus girardi* Iwan, 2004.
– 405-406: male fore tibia, ventral and dorsal views. – 407-409: female fore tibia.
– 410-411: male mid tibia, dorsal and ventral views. – 412-413: female mid tibia.
– 414-415: male hind tibia, ventral and dorsal views. – 416-417: male hind femur, ventral and dorsal views.
– 418-419: aedeagus, ventral and dorsal views. – 420: ovipositor.
Figs 421-424: *Styphacus iwani* Ferrer, 2002.
– 421: head. – 422-423: apical part of elytron, ventral and dorsal views.
– 424: mesosternal process.

Source MNHN, Paris



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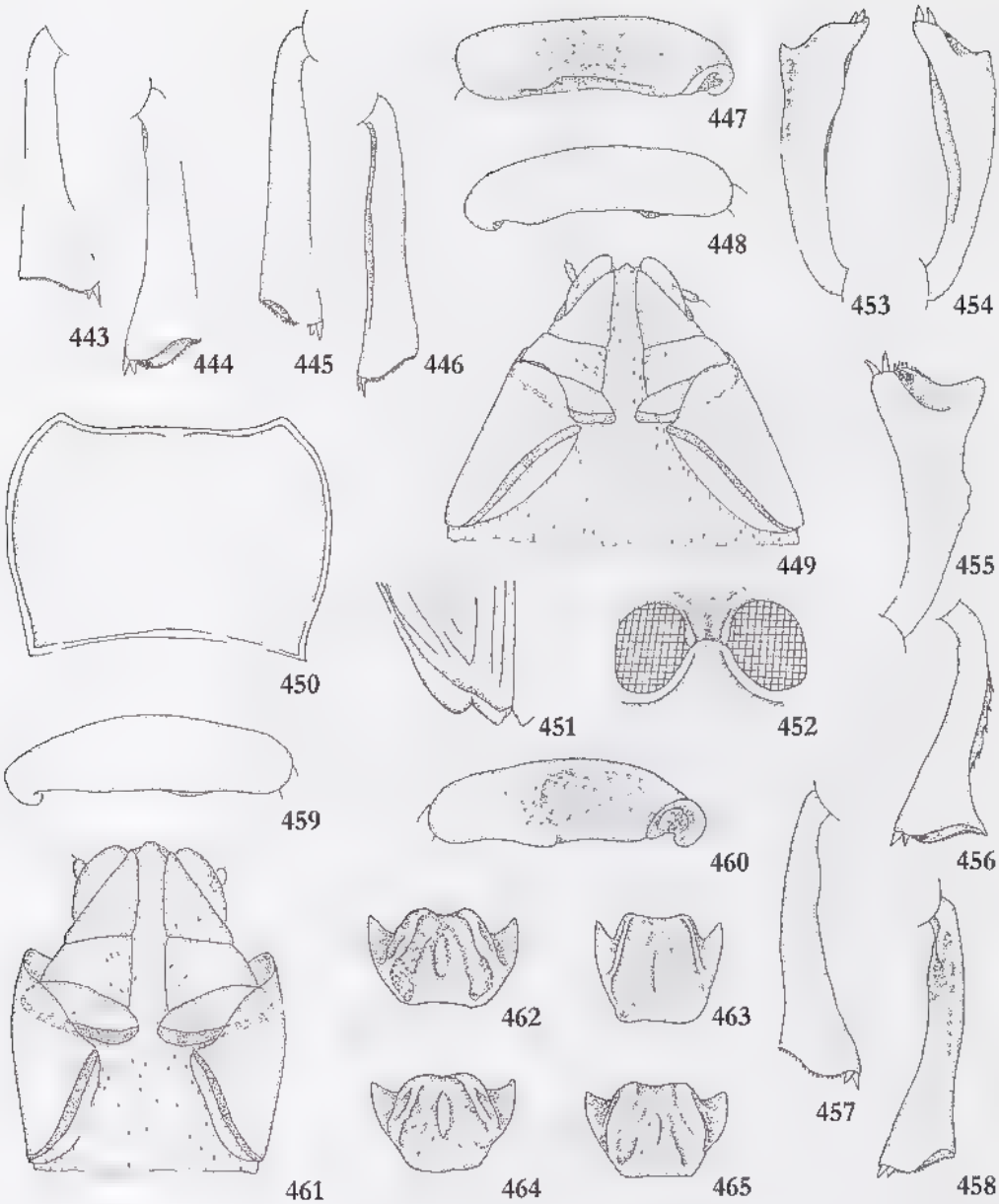
Source : MNHN, Paris



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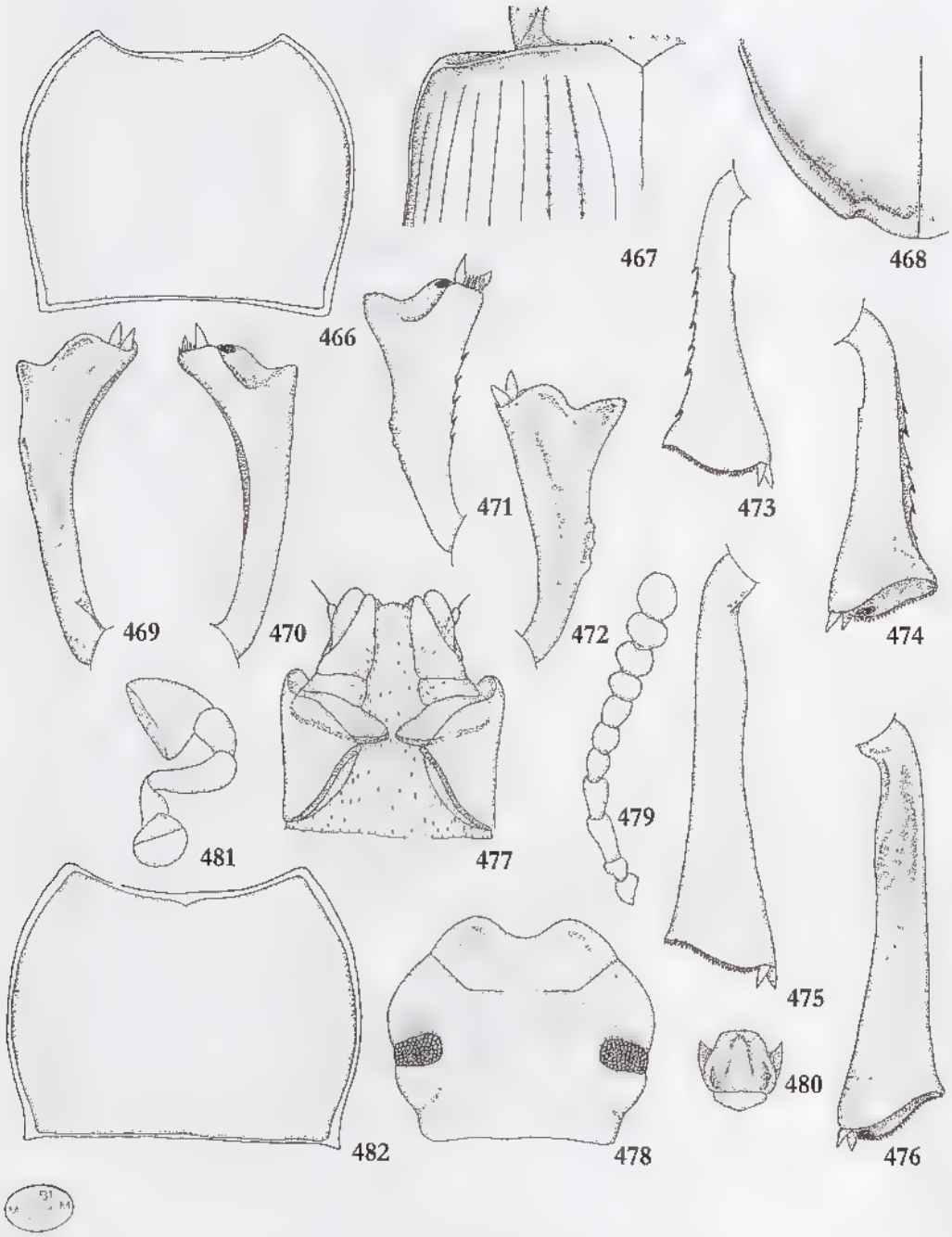
– 462-465: mentum.

Source : MNHN, Paris



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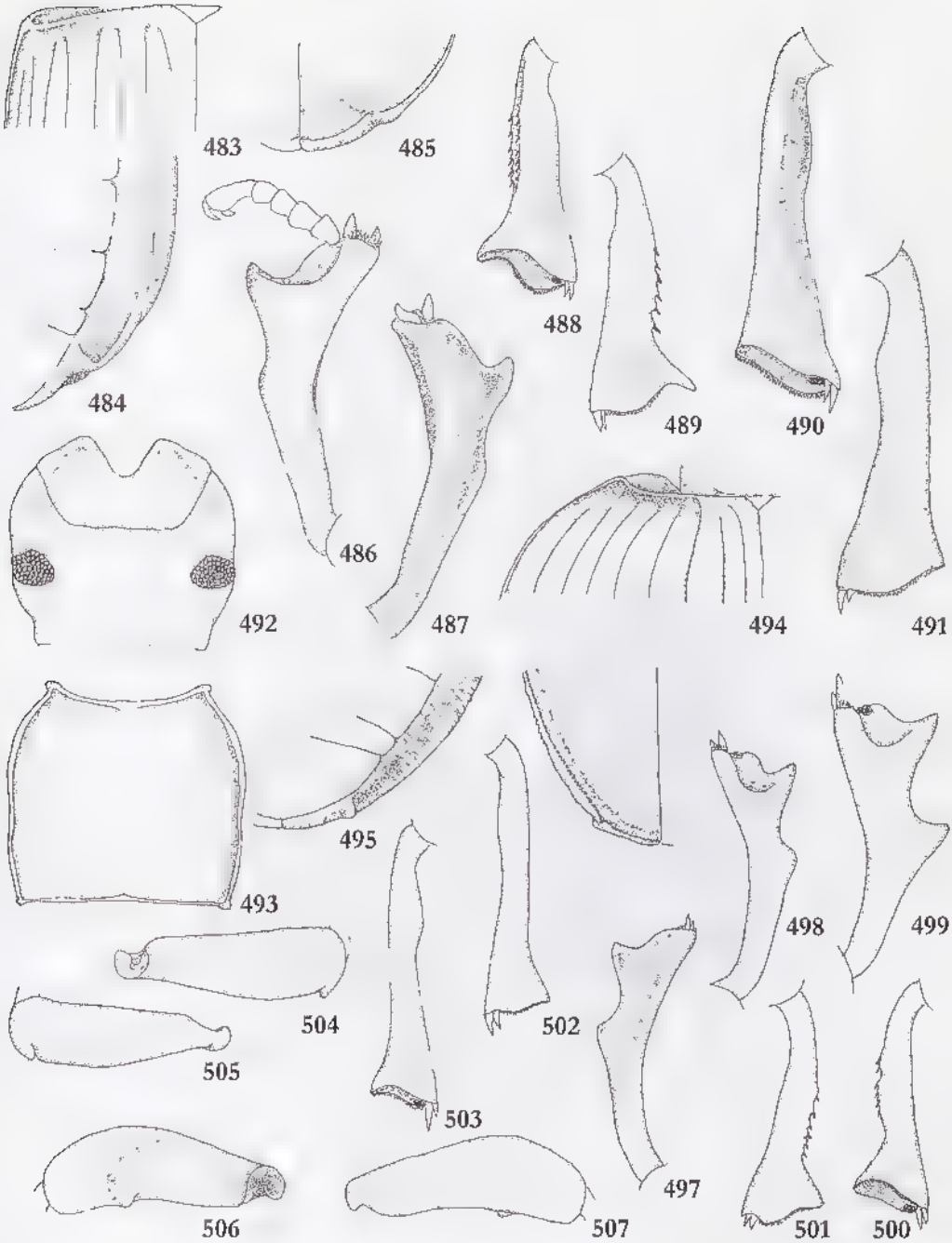
Source : MNHN, Paris



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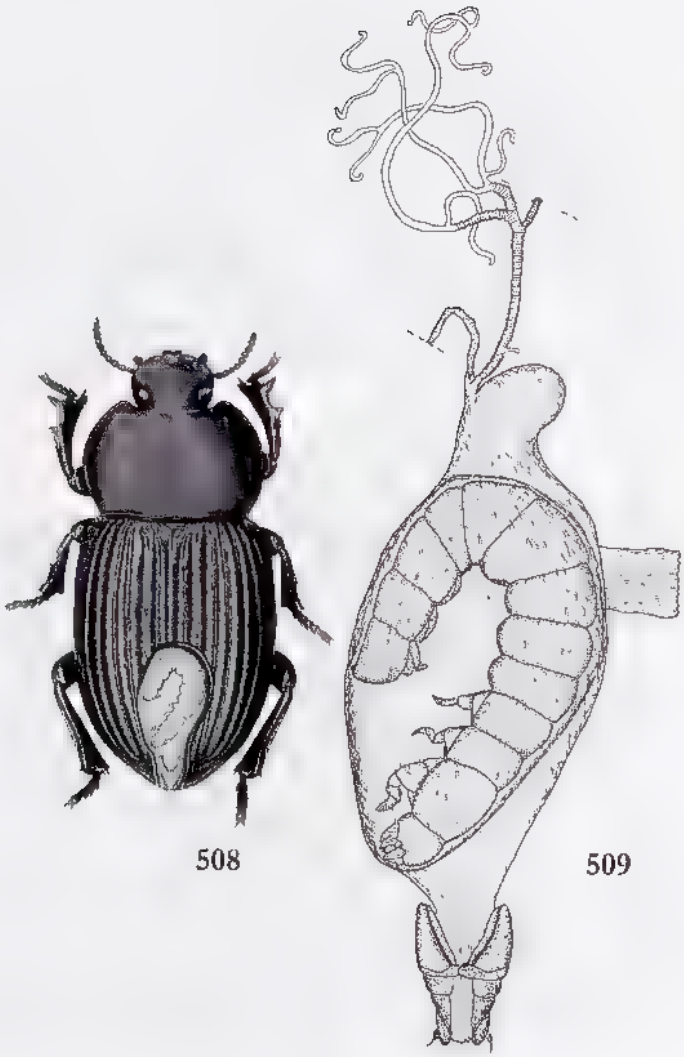
Source : MNHN, Paris



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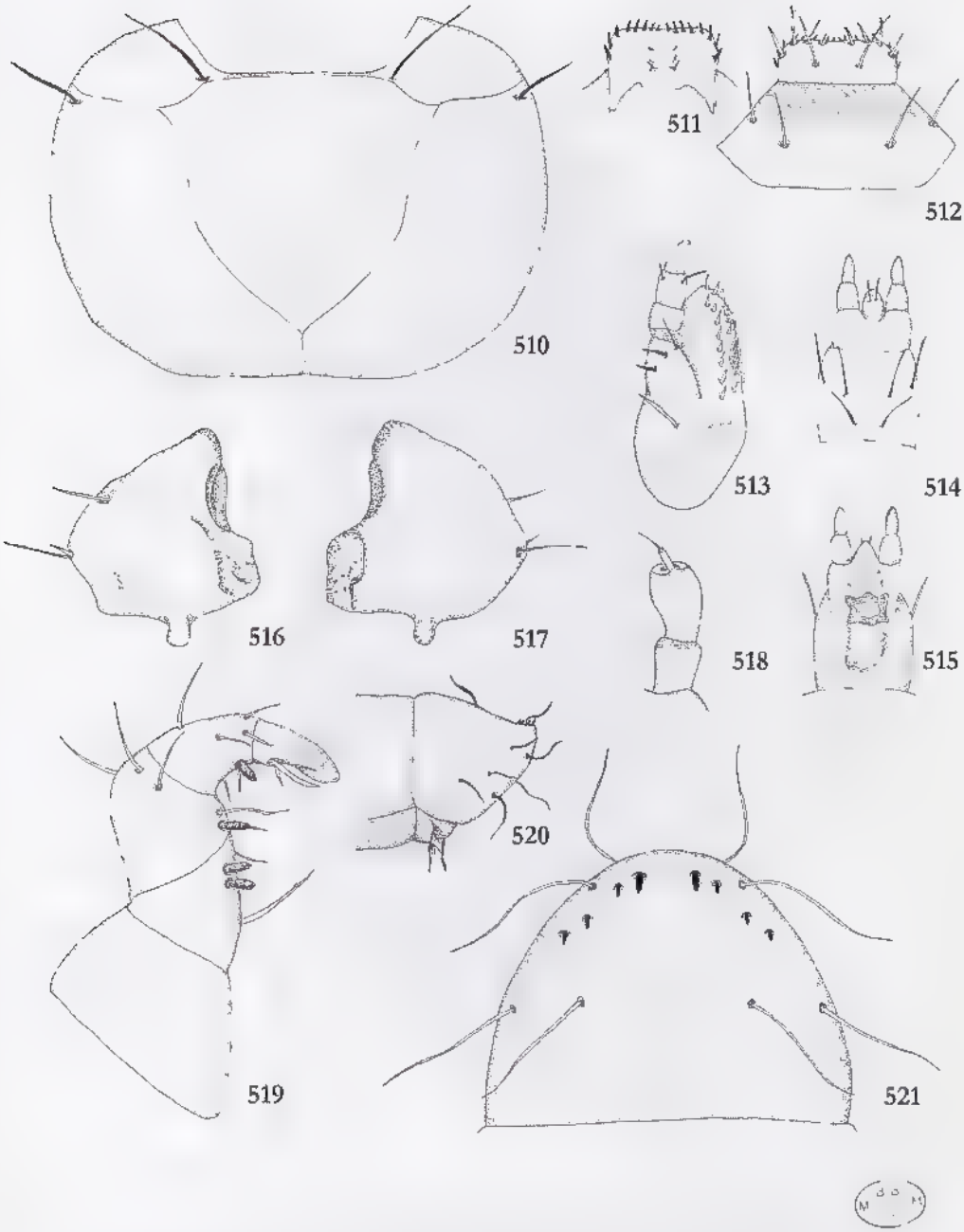
Source : MNHN, Paris



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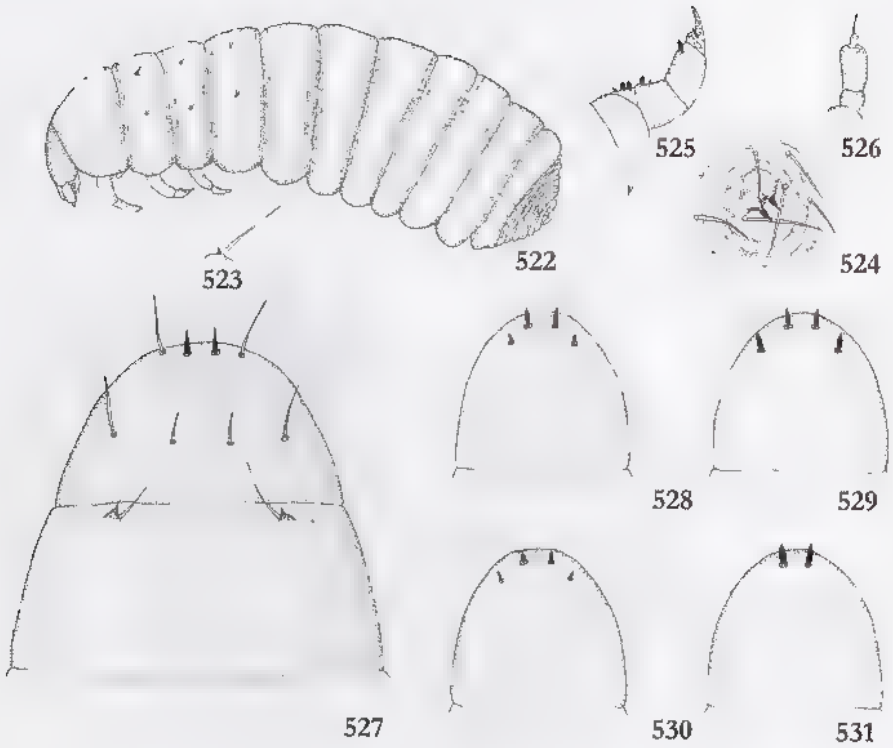
Source : MNHN, Paris



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Source : MNHN, Paris

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Source : MNHN, Paris

Plate 30. Fig. 533 *Pokryszkiella cornuta* Iwan, 1996. Male habitus (drawing: J. Kania).

Source : MNHN, Paris

Plate 31. Fig. 534 *Styphocus decorser* Fairmaire, 1901 Male habitus (drawing J. Kania)

Source : MNHN, Paris

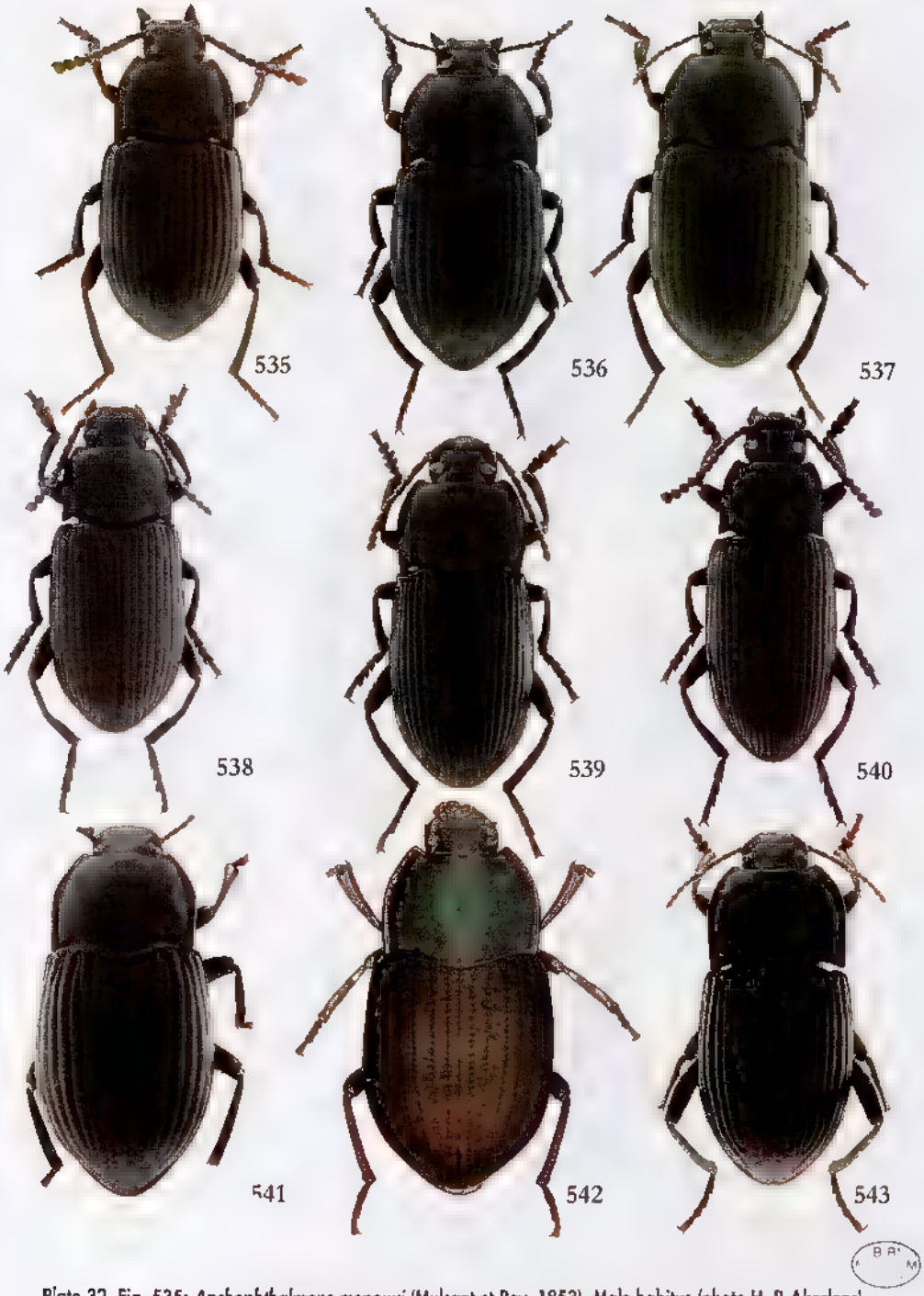

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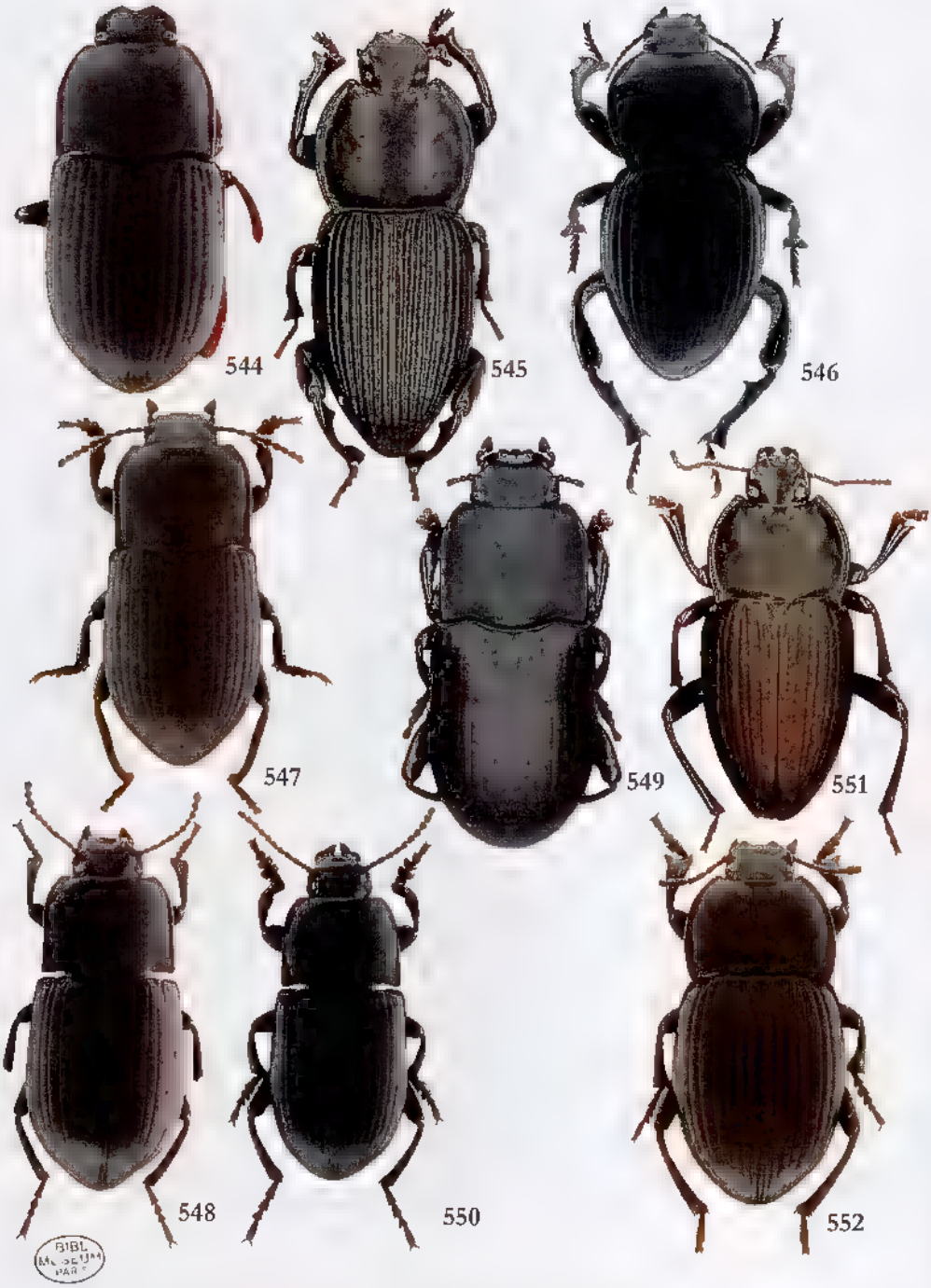
Fig. 543: *Clastopus ordinarius* (Iwan, 1996). Male holotypus habitus (photo: H.-P. Aberlenc).

Source : MNHN, Paris



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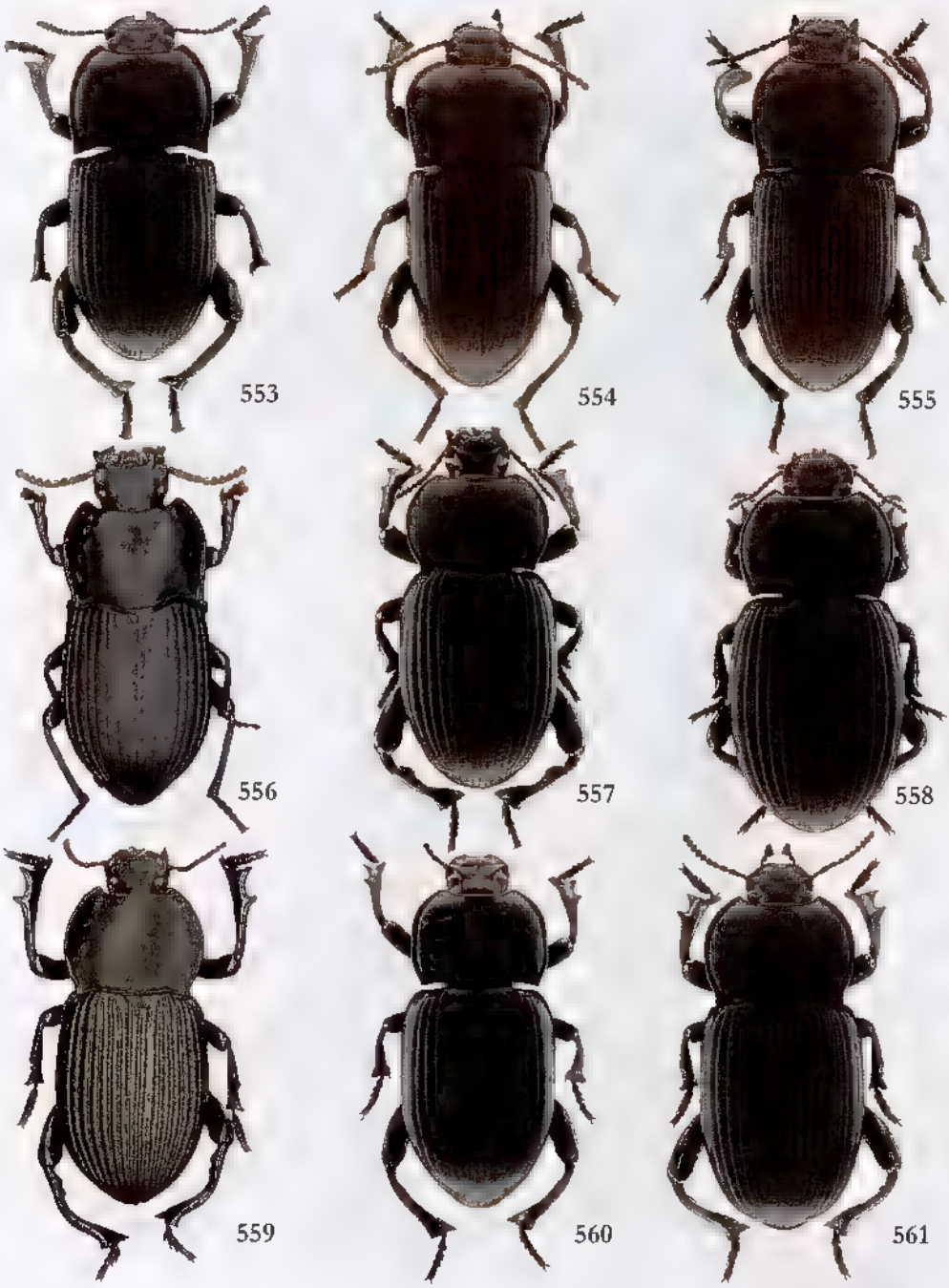
Source : MNHN, Paris



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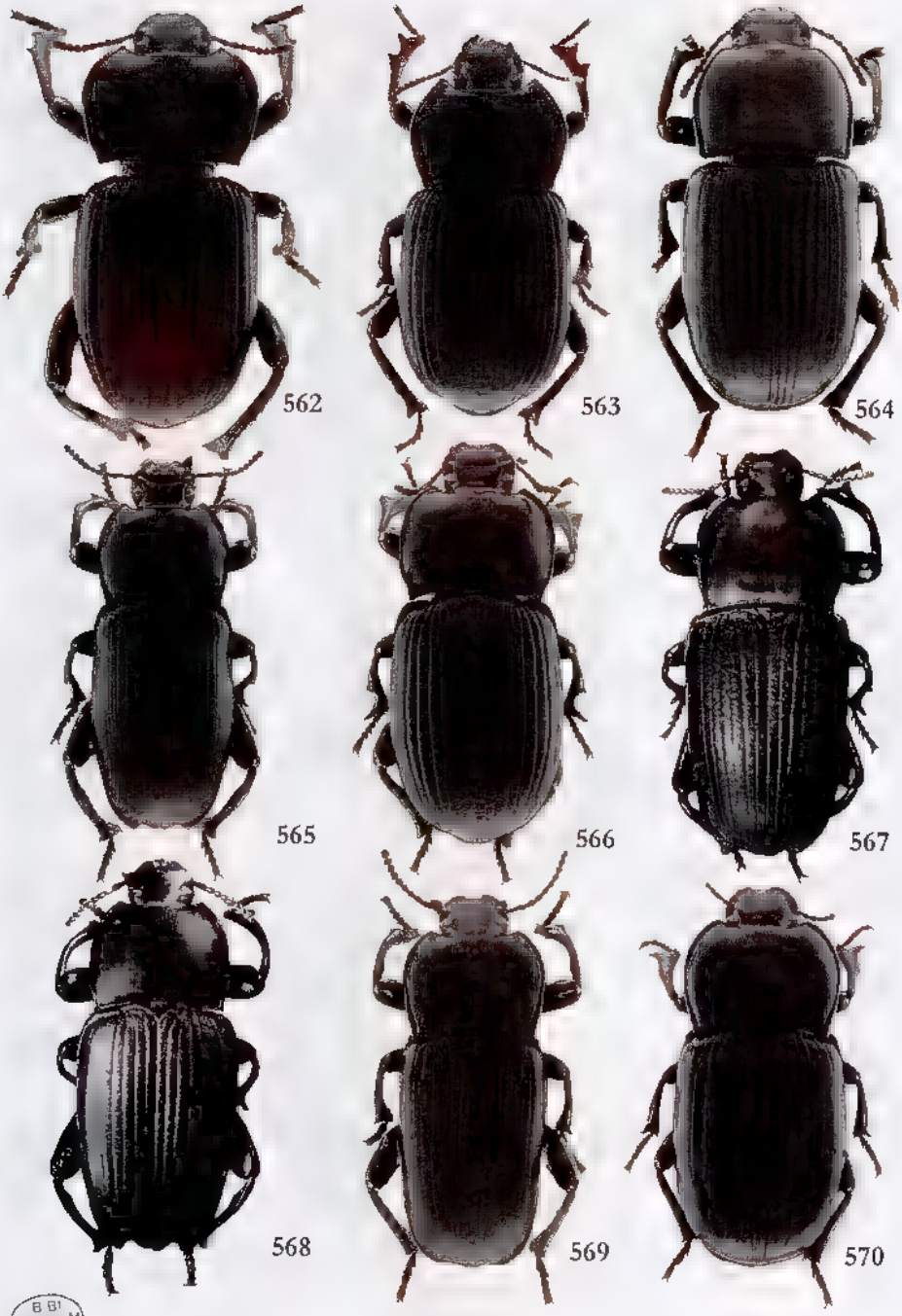
Source MNHN, Paris



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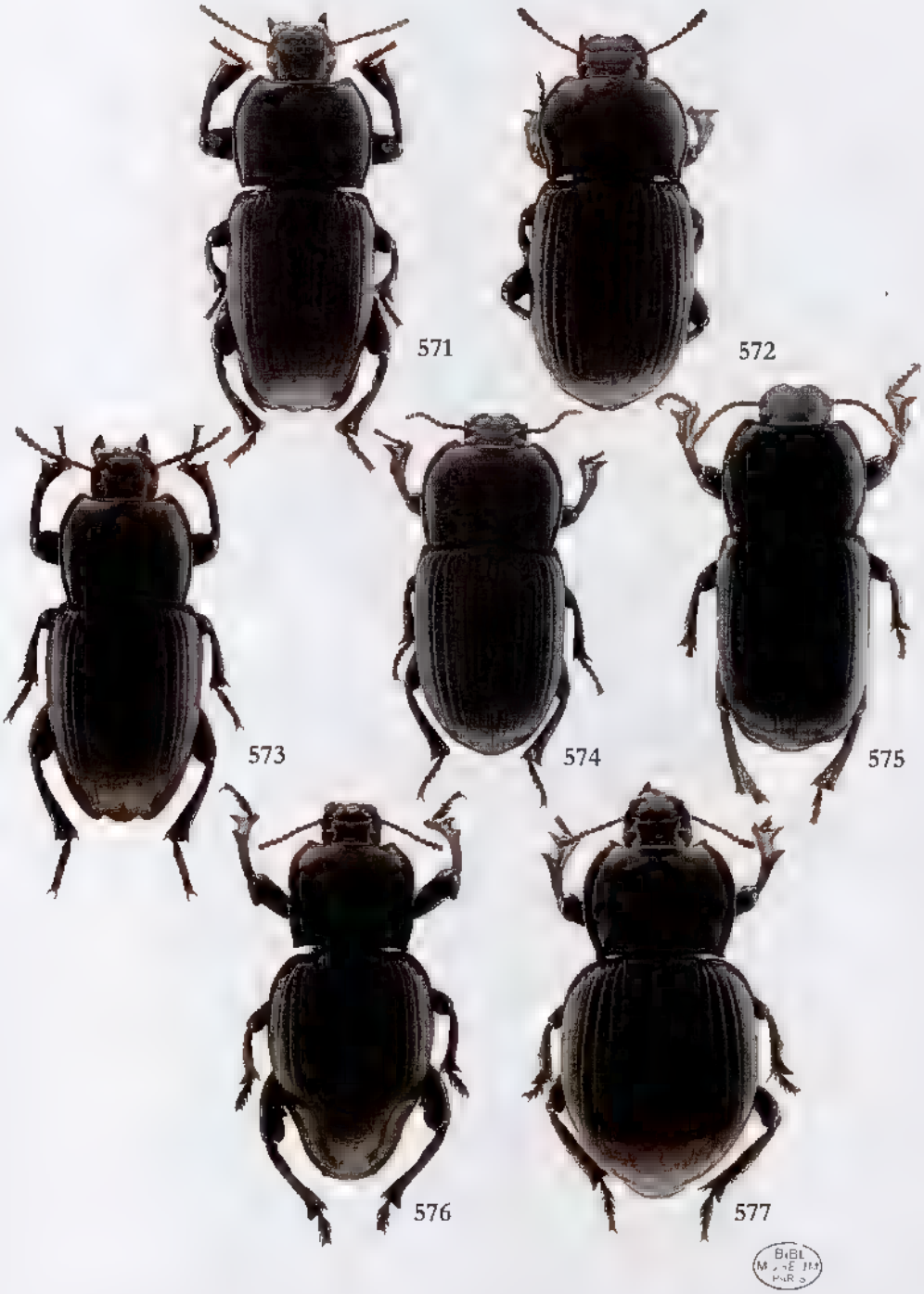
Figs 565-566: *Styphacus decorsei* Fairmaire, 1901. 565: male habitus; 566: female habitus (photos: H.-P. Aberlenc).
Fig. 567: *Styphacus drugmandi* Iwan, 2004.
Fig. 568: *Styphacus girardi* Iwan, 2004.
Figs 569-570: *Styphacus kochi* Iwan, 1996. – 569: male habitus. – 570: female habitus (photos: H.-P. Aberlenc).

Source : MNHN, Paris



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Figs 573-574: *Styphacus nimius* Iwan, 1996. – 573: male habitus. – 574. female habitus (photos: H.-P. Aberlenc).
Fig. 575: *Styphacus pauliani* Iwan, 2004. Male holotypus habitus (photo: H.-P. Aberlenc).
Figs 576-577: *Styphacus phreneticus* Iwan, 1996. – 576: male habitus. – 577: female habitus (photos: H.-P. Aberlenc).

Source : MNHN, Paris

Plate 37. Figs 578-579: Tuléar [= Toliara].
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Source : MNHN, Paris

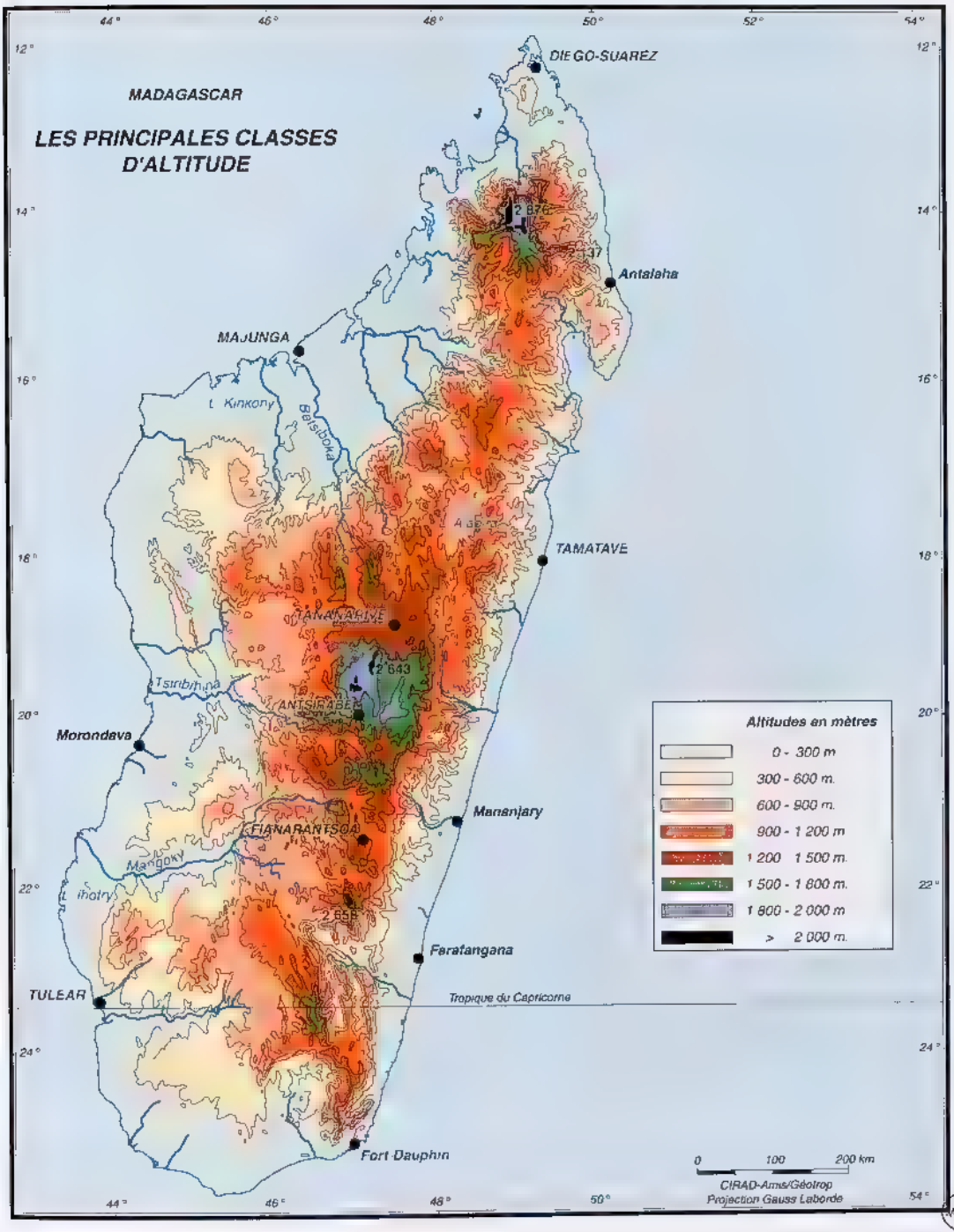

Plate 38. Carte du relief de Madagascar / Hypsometric map of Madagascar (Service cartographique du Cirad).

Source : MNHN, Paris

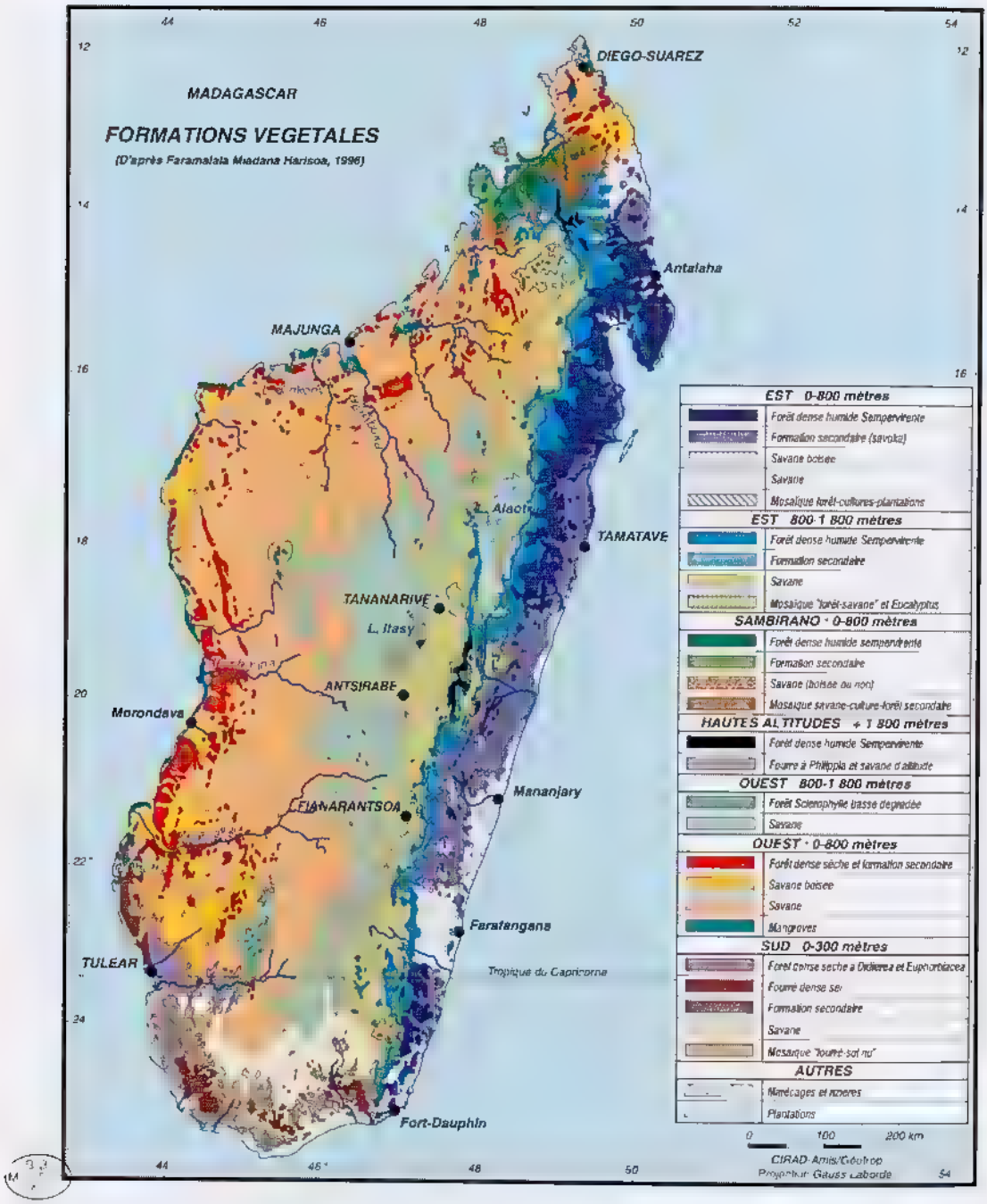

Plate 39. Divisions phytogéographiques de Madagascar / Phytogeographic map of Madagascar (Service cartographique du Cirad).

Donosz WAN [redacted]

Source : MNHN, Paris

Malagasy Platynotina species checklist

Platynotoid group

Anchophthalmops Koch, 1956
01. *Anchophthalmops menouxi* (Mulsant et Rey, 1853)

Lechius Iwan, 1995
02. *Lechius abacoides* (Fairmaire, 1902)
03. *Lechius madagascariensis* (Iwan, 1998)
04. *Lechius steineri* Iwan, 1995

Zidalus Mulsant et Rey, 1853
05. *Zidalus attenuatus* (Klug, 1833)
06. *Zidalus insularis* (Mulsant et Rey, 1853)
07. *Zidalus servus* (Mulsant et Rey, 1853)

Melanocratoid group

Clastopus Fairmaire, 1898
08. *Clastopus aberlenci* Iwan, 2005
09. *Clastopus eurynotoides* Fairmaire, 1898
10 *Clastopus ordinarius* (Iwan, 1996)
11. *Clastopus tenuiculus* (Iwan, 1996)

Doyenus Iwan, 1996
12. *Doyenus dentatus* Iwan, 1996
13. *Doyenus uncus* Iwan, 1996

Hovademus Ardoin, 1974
14. *Hovademus andringitrensis* Ardoin, 1974
15. *Hovademus pauliani* Ardoin, 1974

Madobalus Fairmaire, 1901
16. *Madobalus rotundicollis* Fairmaire, 1901

Melanocratus Fairmaire, 1895
17. *Melanocratus fairmairei* Iwan, 1996
18. *Melanocratus ferreri* Iwan, 1996
19. *Melanocratus validipes* Fairmaire, 1895

Pokryszkiella Iwan, 1996
20. *Pokryszkiella cornuta* Iwan, 1996

Source : MNHN, Paris

Sebastianus Iwan, 1996

21. *Sebastianus endrodyi* Iwan, 1999
22. *Sebastianus madagascariensis* Iwan, 1999
23. *Sebastianus magnus* Iwan, 1996
24. *Sebastianus major* (Fairmaire, 1899)
25. *Sebastianus ovoideus* (Fairmaire, 1902)
26. *Sebastianus projectus* Iwan, 1996
27. *Sebastianus simplex* Iwan, 1996

Styphacus Fairmaire, 1901

28. *Styphacus bartolozzii* Iwan, 1996
29. *Styphacus decorsei* Fairmaire, 1901
30. *Styphacus drugmandi* Iwan, 2004
31. *Styphacus girardi* Iwan, 2004
32. *Styphacus iwani* Ferrer, 2002
33. *Styphacus kochi* Iwan, 1996
34. *Styphacus neuter* (Fairmaire, 1902)
35. *Styphacus nimius* Iwan, 1996
36. *Styphacus pauliani* Iwan, 2004
37. *Styphacus phreneticus* Iwan, 1996

Source : MNHN, Paris

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Imprimé en France par Dupli-Print à Domont (95)
en juin 2010
N° d'impression : 153029

Source : MNHN, Paris

The taxonomical study of the Coleoptera Tenebrionidae Platynotina of Madagascar is presented and illustrated. The Madagascan Platynotina comprise 37 species in 11 genera. Illustrated identification keys are proposed in French and in English to identify genera and species. This reference work contributes to the knowledge of the Malagasy biodiversity which is rich in endemic species. It provides an invaluable tool for all those who are working for the knowledge and protection of nature in Madagascar.

Ce volume est consacré à l'étude taxonomique des Coleoptera Tenebrionidae Platynotina de Madagascar, qui comptent 37 espèces réparties dans 11 genres. Des clés de détermination illustrées sont proposées en français et en anglais pour identifier les genres et les espèces. Cet ouvrage de synthèse apporte une contribution à la connaisance de la biodiversité malgache, riche en espèces endémiques. Il s'adresse aux entomologistes et à toutes les personnes qui œuvrent pour la connaissance et la protection de la nature à Madagascar.

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62 €

ISBN
IRD 978-2-7099-1685-1
QUÆ 978-2-7592-0630-8
MNHN 978-2-8565-3650-6

ISSN 0428-0709

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